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FARM ADJUSTMENT OPPORTUNITIES IN WASHINGTON PARISH, LOUISIANA

By
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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS AND
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FARM-ADJUSTMENT OPPORTUNITIES IN WASHINGTON PARISH

By
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CONTENTS

Page
THE SITUATION NOW 1
Application to Mississippi-Louisiana Central Coastal Plains 2
Historical development 3
Climatic conditions and soil resources 5
Relation of physical conditions to farming 7
Description of farming 9
Types of farm organization 14
Incomes from different types of farm organization 20
ADJUSTMENT OPPORTUNITIES 28
Long-time adjustments in size 28
Alternatives for present organizations 30
Extra dollars from farm forests 46
Tung 59
A PATTERN FOR BETTER FARM LIVING 62
Summary of adjustment opportunities 62
Area meaning of farm adjustments 63

THE SITUATION NOW

Louisiana parishes lying just east of the Mississippi River are commonly referred to as the Florida Parishes, for they were part of Florida before that land was annexed by the United States in 1812. Washington Parish is situated in the northeast corner of the Florida Parishes. It is bounded on the north and east by the State of Mississippi. The southern part of the parish is about 90 miles north of New Orleans. It forms a part of the Mississippi-Louisiana Central Coastal Plains. The total area of Washington Parish is 425,000 acres, of which about 217,000 acres are in farms and 87,000 acres are cropland. Most of the acreage not in farms is cut-over land.

The agriculture in Washington Parish is characterized by small farms and small irregular fields that are tilled with simple tools. The basic cropping system is cotton and corn, supplemented by several minor crops, including cowpeas, soybeans, peanuts, sugar cane, watermelons, green beans, sweetpotatoes, and Irish potatoes.

On most of the farms, cotton is the only important commercial enterprise. Other enterprises are included primarily to supply food and feed for the farm and family. Commercial production of dairy products and truck crops, in certain parts of the parish, is the principal variation from the usual cotton system of farming.

The physical characteristics of the parish are not favorable to the low-cost methods of producing cotton which are being effected in competing areas through the use of large-scale machinery, so readjustments have been, and are likely to continue to be, directed toward enterprises to add to the income from cotton. These include dairying, truck crops, farm cattle, crops for feed, and forestry.

Problems of farming have become increasingly difficult and many farmers have failed to make incomes that give their families a fair level of living. Some farms have been successful. The reasons for these variations of income and the possible adoption by low-income farmers of the more successful practices have recently been studied.

What have the farmers been doing? What equipment and land do they have? What were their results? How can they change their practices? What incomes will probably result from changed practices? To answer these questions for various farms is the purpose of this report.

Application to Mississippi-Louisiana Central Coastal Plain

Results of this analysis have considerable application throughout the Mississippi-Louisiana Central Coastal Plain for the similarity of physical conditions has encouraged the growth of a similar type of agriculture throughout.

The size of farm and cropland organization in Washington Parish is about the same as that found in other parts of the Central Coastal Plain (table 1). Cotton is the dominant cash enterprise and small acreages of intensively tilled crops characterize the farm organizations. Large tracts of cut-over and nonfarm land are common.

Some differences may be noted. The Louisiana parishes, together with four or five adjoining counties in Mississippi, have an outlet for fluid milk in the New Orleans market, whereas in other parts of the Coastal Plains condenseries or creameries have been the outlets. This has resulted in a relatively greater increase in dairying as an alternative enterprise in the fluid milk section.1/ Then the river terraces are broader and a larger proportion of the farms are located on the terrace soils. More hogs are kept in Washington Parish, and during most of the year they range in the woods.

1/ For an analysis of possibilities for farm adjustments in the northern sections of this area, see "Farm Planning Information, Covington County, Mississippi". Bureau of Agricultural Economics. (Preliminary). Dec.2,1940.

Table 1.- Land use, size of farm, crop acreages and livestock numbers, Mississippi-Louisiana Central Coastal Plain and Washington Parish, Louisiana

Item	Unit	Washington Parish	Mississippi-Louisiana Central Coastal Plain 1/
Proportion of land area in farms	Percent	51.0	59.3
Size of farm	Acres	66.5	70.5
Cropland, per farm	do.	26.7	26.8
Cotton, per farm	do.	6.0	7.0
Corn, per farm	do.	14.2	13.7
All cattle per farm	No.	6.1	4.6
Cows milked per farm	do.	2.4	1.6
All swine per farm	do.	5.7	3.0
Horses & mules per farm	do.	1.5	1.5

1/ Minor civil divisions included are: Washington and St. Helena Parishes in Louisiana; Walthall, Marion, Pike, Lamar, Jones, Covington, Jeff Davis, Lawrence, Jasper, Smith, Simpson and Rankin Counties, Mississippi.

U. S. Census Reports.

Historical Development

The colonization of Washington Parish began more than 125 years ago. The census of 1820 reported 2,517 people in the parish, most of whom were of Scotch, Irish, and English origin. By 1850 many of the settlers had begun making their living by cultivating the soil. The Civil War delayed matters but by 1880 the agricultural development was increasing at a rapid rate.

Four points should be noted in the agricultural development since 1880: (1) the gradual increase in the number of farms and the steady decline in wood and pasture land; (2) the industrial development of the parish and the growth of part-time farming; (3) the development and decadence of the one-crop cotton system, and (4) the relatively small change that has occurred in the type of machinery and the methods of production.

Growth of Farm Population and Industrial Development

The number of farms in the parish increased from 1880 to 1940 at the rate of about 40 a year (table 2). Recently the rate has been increasing slightly. Farms have been subdivided so that the average size of farm decreased from 208 acres in 1880 to 66 acres in 1940. The extent of cropland per farm has remained about the same.

The building of the New Orleans Great Northern Railroad in 1904, and the establishment of a large sawmill at Bogalusa, added an active industrial group to the agricultural area. Total population doubled between 1900 and 1910. The immigrants were largely mill and other urban workers.

When the virgin forest resources were exhausted the sawmill was replaced by a pulp mill, which is still operating in Bogalusa. Many of the sawmill workers moved to the land cleared by the lumber company, became farmers, and now are a substantial part of the farm population.

Table 2.- Trend in number of farms, size of farm and acreages in cotton and corn, Washington Parish, 1880-1935 1/

Year	Farms	Farm land	Size of farm	Improved land per farm	Acreage of cotton per farm	Acreage of corn per farm
	Number	Acres	Acres	Acres	Acres	Acres
1880	695	144,491	207.9	27.0	9.2	9.2
1890	1,031	174,068	168.8	27.5	12.7	9.7
1900	1,442	224,540	155.7	33.8	12.7	12.2
1910	1,715	150,339	87.7	30.9	11.4	11.4
1920	2,165	178,794	82.6	28.9	9.7	13.0
1930	2,592	162,955	62.9	30.3	10.8	11.4
1935	2,977	184,942	62.1	27.4	7.2	14.0
1940	3,239	216,979	66.5	29.2	6.0	14.2

1/ Acreage of crop is for previous year.

U. S. Census Reports.

Part-time farming has become of increasing importance in the parish. Most of the part-time farmers live near Bogalusa, farming in slack seasons and in odd hours, and driving into Bogalusa to work. According to the 1935 farm census, 587 farm operators in Washington Parish were doing nonagricultural off-farm work. Approximately 60 percent of these lived in Wards 4 and 5.

Development and Decadence of Cotton System

Cotton had become an important cash crop as early as 1849, when the census reported the production of 693 bales. By 1859, production had increased to 2,373 bales. The cotton system had become firmly entrenched by 1889 with an average of 12.7 acres of cotton planted per farm; this amounted to nearly one-half of their improved land (table 2). No substantial change in either acreage of cotton planted or proportion of cropland in cotton was made until after the World War. The two crops, cotton and corn, comprised over 80 percent of the improved land during this period. Yields were good and not much fertilizer was needed. Farms were organized to produce cotton. Corn and feed crops were grown primarily to produce feed for the workstock.

The 1910-20 decade marked the beginning of a new era. Ravages of the boll weevil, together with declining soil fertility, caused many farmers to reduce their cotton acreage. Yields declined from 200 pounds in 1900 to 110 pounds in 1919, and went even lower in the following 2 years. The acreage of cotton per farm dropped from 11.4 in 1910 to 9.7 in 1919. Following these misfortunes, the economic depression of 1929 carried cotton prices to disastrously low levels until 1933, when legislation provided for adjustments in cotton acreage.

Although the events of the last 20 years have reduced the acreage considerably, the farmers have usually put the released acreage into corn although supplemental farm enterprises have been developed in a few instances. These enterprises have been mostly restricted to dairying, other livestock, and various truck crops. The need for developing farm enterprises to supplement the decreasing income from cotton is recognized, but the lack of a suitable substitute cash crop has kept most of the farmers in cotton.

Machinery and Equipment

The farm machinery and equipment used in Washington Parish has not changed much in size, over the years. This is reflected in the fact that the acreage of improved land per farm in 1935 was 27.4 acres, or only slightly larger than the acreage in 1880 Half-row equipment is commonly used here. This usually consists of a home-made stalk cutter, a planter, a side harrow, a spring-tooth harrow, one or two turning plows, several sweeps, and possibly a wagon. Only a small acreage can be handled by one family with this kind of equipment. A significant proportion of the farmers would find it difficult to use larger machinery because of small fields, topographical conditions, and the large amount of hand labor needed for cotton picking.

Climatic Conditions and Soil Resources

The parish has a growing period of approximately 8 months. The last frost usually occurs about the second week in March. Only once during the last 25 years has a frost occurred in April. The first frost usually comes about the second week in November.

The annual rainfall averages about 60 inches and fluctuates very little. Severe droughts seldom occur. Rainfall is heaviest in winter and in summer, but usually does not vary widely from season to season.

According to weather records at Franklinton, rains occur on approximately one day out of every three. The high humidity and warm climate encourage insect pests and diseases.

Soils and Topography

The soils and topography of Washington Parish are similar to those in the rest of the Mississippi-Louisiana Central Coastal Plain. However, the river terraces are broader and the proportion of terrace soil is higher. On the basis of topography, the soils of the parish may be divided roughly into upland and terrace soils (table 3). The topography of the upland soils is gently rolling to rough and hilly whereas that of the terrace soils is almost level.

Both groups may be divided further on the basis of drainage and topography. Among the upland soils, the Pheba, Caddo, and Susquehanna series, representing about one-fifth of the upland, are poorly drained soils with heavy subsoils and gentle slopes. They are generally considered rather cold and unproductive for most farm crops. The rolling phases of the Ruston and Orangeburg series are another group of soils inferior for crop production. These soils are well drained and originally were highly productive but erosion has lowered the yields. The small fields and rough topography make them difficult to cultivate. The more level phases of the Orangeburg and Ruston series, comprising about one-half of the hill land, are the most desirable farm lands. These soils are well drained, highly productive, and suitable for efficient cultivation.

The terrace soils with gravel subsoils are well drained; when accessible, they make desirable farm land. The Cahaba and certain types of the Kalmia soils are in this category. Where the terrace soils are underlaid with clay, lack of drainage generally makes the land undesirable for cotton. The better drained fields are put in cotton, corn, truck crops and feed crops, while the tighter land is generally unimproved.

Table 3.- Proportion of land in different soil series,
Washington Parish

Upland soils		Terrace soils	
Soil series	Percent of area	Soil series	Percent of area
Ruston	29.5	Kalmia	13.0
Orangeburg	16.0	Ochlockonee	8.5
Pheba	7.8	Cahaba	6.9
Caddo	1.0	Myatt	5.2
Susquehanna	1.0	Bibb	3.3
		Thompson	3.0
		Leaf	2.2
		Johnston	1.9
		Miscellaneous	0.7
Total	55.3	Total	44.7

United States Department of Agriculture, Soil Survey of Washington Parish, 1925

Relation of Physical Conditions to Farming

On the basis of soils, topography, present use of land, crop yields and apparent productivity, farm land in Washington Parish was grouped into four production areas for this study.2/ These areas are shown in figure 1.

Area I is hill land, composed mainly of the more productive phases of Orangeburg and Ruston soils that are well drained and generally not severely eroded. Most of the land is now in farms, and nearly half of the farm land is in crops (table 4). Land in this area is generally considered to be the best cotton land in the parish. One-fourth of the cropland is in cotton. The average lint yield for the 1934-38 period was 294 pounds per acre.

Area II includes the hill sections that have a drainage or erosion problem or are less productive because of the type of soil. The soils are of two general types: (1) Phebe, Caddo, and Susquehanna soils located largely southwest of the Bogue Chitto River (these soils are generally poorly drained and have heavy clay subsoils.), and (2) the rougher and more eroded phases of the Ruston and Orangeburg soils located east of the Bogue Chitto.

Table 4.- Acreage of land in farms, land use, and productivity by major land classes, Washington Parish, 1939 1/

Areas	Farm land	Cropland		1934-38 adjusted cotton yield	Percentage of cropland in			
		Acreage	Percentage of farm land		Cotton	Corn	Idle	Other
	Acres	Acres	Percent	Pounds	Percent	Percent	Percent	Percent
Area 1-better upland	56,738	25,571	45	294	25	50	8	17
Area 2-poorer upland	59,277	25,787	44	236	23	51	11	15
Area 3-better terrace	46,447	18,799	40	287	24	53	8	15
Area 4-poorer terrace	35,428	9,878	28	231	18	49	13	20

1/ Does not include 39 noncontiguous farming units lying in two or more soil areas and farms which could not be located.
AAA worksheets taken on each farm cooperating in the 1939 program.

The soils of Area II are generally less productive than those of Area I. The 1934-38 yield of cotton averaged 236 pounds per acre, or about 50 to 60 pounds

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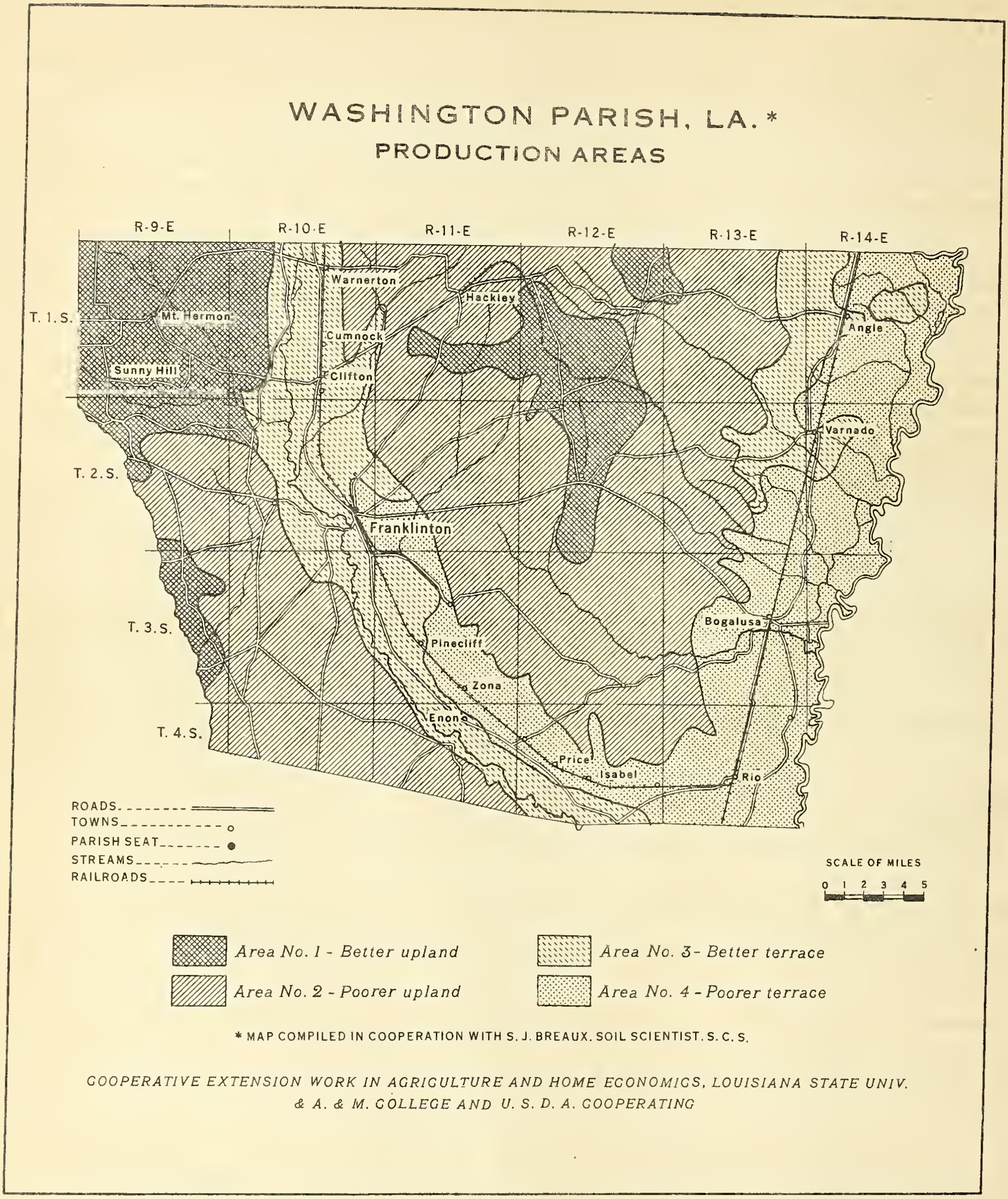
2/ Area delineation work done in cooperation with S. J. Breaux, Soil Scientist, Soil Conservation Service.



* MAP COMPILED IN COOPERATION WITH S. J. BREAUX, SOIL SCIENTIST, S. C. S.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, LOUISIANA STATE UNIV. & A. & M. COLLEGE AND U. S. D. A. COOPERATING

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Figure 1. - Production areas, Washington Parish

less than the cotton yield in Area I. This lower productivity of the land is also reflected in the condition of the farm buildings and improvements. In this area, farm improvements are in greater need of repair, and home-made log sheds and barns are common.

Farming in Area II is concentrated mainly on small tracts of cultivatable land. A high proportion of the area is non-farm land composed chiefly of cut-over timber areas. The land that is unfenced is used by the farmers as pasture for their livestock.

The earliest settlements in the parish were made in Area III. Much of this land has been in cultivation from 60 to 100 years. It includes the better drained tracts of terrace soils, largely the Cahaba and the well-drained phases of the Kalmia series. The land is almost flat, and where subsurface drainage is sufficient, the land is highly productive. The average yield of cotton for the 1934-38 period was 287 pounds an acre, or only slightly lower than in Area I. Most of the land lies close to a river so that the farm units commonly include a substantial acreage of swamp land in addition to the cropland, so about 60 percent of the farm land is not used for crops. The non-cropland, operated under open-range conditions, is used primarily as a community pasture for hogs and cattle.

Area IV is relatively level but is least adapted to crop production because of poor drainage. These soils are commonly designated by farmers as "crawfishy", and are underlain by a clay subsoil so that water stands on the land during much of the winter and spring. Small fields on the more desirable soils are used for crops. The 1934-38 average lint-cotton yield in this area was 231 pounds per acre, or slightly below the yield of Area II. Less than one-fifth of the cropland is used for cotton.

Approximately three-fourths of the land in farms in Area IV is not in crops. A large part of this is cut-over land now covered with sedge grass, and generally not suitable for crops. It is used chiefly for grazing range cattle.

Part-time farms are concentrated in this area. Most of them raise only food and feed products for home use and do not have an AAA worksheet. Information from 65 part-time farmers working in the paper mill at Bogalusa indicates that less than one-fourth of them are complying with the AAA program.3/ As this report is based upon those farms that have AAA worksheets, it is mainly restricted to full-time farmers.

Description of Farming

The major systems of farming in Washington Parish are: (1) cotton, (2) cotton and cattle, (3) general, and (4) cotton and truck.

Nearly three-fifths of all the farms in this parish are strictly cotton farms. About 15 percent of all farms combine cotton and cattle enterprises.

3/ Unpublished data, Department of Agricultural Economics, Louisiana State University.

Another 15 percent are general farms, 6 percent are cotton and truck farms, and approximately 4 percent follow miscellaneous farming systems.4/

On farms classified as cotton farms, cotton is the only important source of cash income. On cotton and cattle farms, dairy cattle or beef bring supplemental income. On general farms, the organization consists of a small acreage of cotton with most of the family income derived from products for family use. On farms designated as cotton and truck farms, the income from cotton is supplemented by money from string beans, Irish potatoes, watermelons, and other truck crops.

Cotton farms are most frequent in the better areas. The relative number of cotton farms varies from slightly over one-third in Area IV to more than two-thirds of the total in Area I (fig. 2). In the poorer areas the general farms are more frequent. This is partially explained by the suitability of the better soils for cotton production. The decrease in the importance of the cotton system is associated with a decrease in the average yield of cotton, (table 4). Another reason for the decrease in the poorer areas is found in the fact that new-land settlement has been accentuated recently and has taken place in these areas.

The cotton and cattle system is most prevalent in the better areas despite the small acreage of range land to be found. This is partially a result of better roads, ability to produce higher yields of corn and other feed crops, and availability of capital for investment in dairy cattle and equipment.

4/ The crop and livestock organization of each farm complying with the AAA program was obtained from the parish AAA office in the fall of 1939. Number of cows were reported by farmers in 1938, the number of horses in 1937, and a complete livestock inventory was obtained in 1939 on approximately one-third of the farms in a survey conducted by representatives of the Agricultural Extension Service. Crop organization was for 1939. Basis for grouping farms by systems:

(1) Cotton system - Farms with more than 20 percent of their cropland in cotton, less than 10 percent of their cropland in truck crops, and less than 4 cows.

(2) Cotton and cattle system - Farms having the same cropland distribution as (1), but with at least 4 cows and more than 1 cow for each 7 acres of crops.

(3) Cotton and truck system - Farms having at least 10 percent of their cropland in truck crops, at least 15 percent of their cropland in cotton, and less than 4 cows.

(4) General farms - Farms having more than 40 percent of their cropland in corn and feed crops, less than 20 percent of their cropland in cotton, less than 10 percent of their cropland in truck crops, and less than 4 cows.

(5) Miscellaneous farming systems - Farms not classified in above groups.

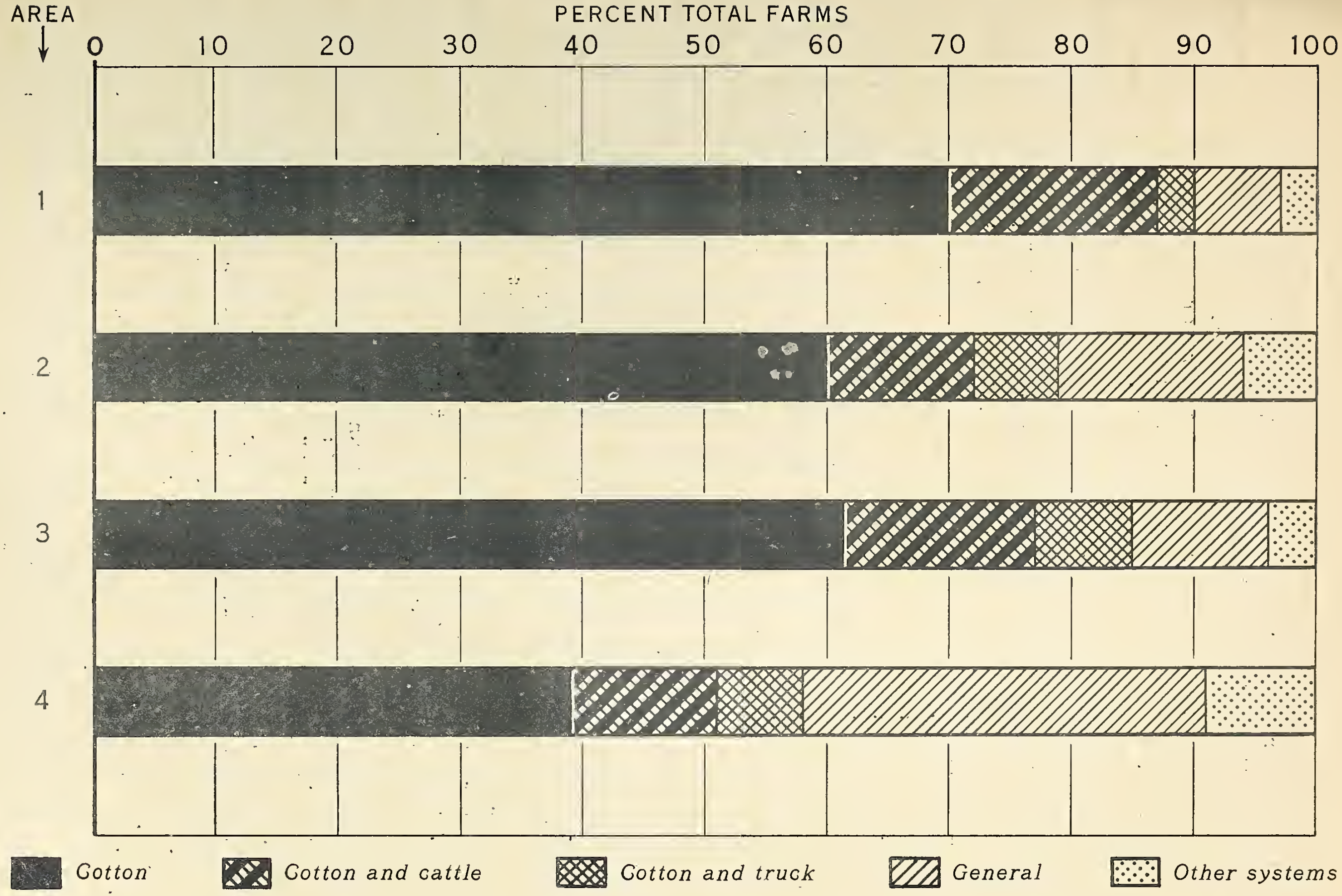

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Figure 2. - Systems of farming, Washington Parish

Farm Tenure

Considered on an operating unit basis the large majority of farms in Washington Parish are operated by resident owners. Table 5 indicates that 93 percent of the farm operators own and operate their land. However, approximately one-fourth of these operators employ one or more additional tenant families to assist with the farming. Most of these tenants are sharecroppers although a few are nonoperating share tenants.

Table 5.- Distribution of farms according to tenure of operator

Item	Type of operator			All operators
	Owner	Part-owner	Tenant	
	Percent	Percent	Percent	Percent
Proportion of all farms	93	1	6	100
Proportion of farms having				
One family	73	78	82	74
Over one family	27	22	18	26

1939 AAA worksheets.

Size of Farms

More than two-thirds of the operating units were small owner-operated farms (table 6). Over one-half of the farmers cultivated less than 30 acres of cropland 5/, but a few farmers operate very large units with many tenants and sharecroppers. For example, one farm in the parish had almost 2,000 acres of cropland and more than 50 tenants and croppers. Because of these few very large farms, the average size of farm is not representative of the prevailing farm size in Washington Parish.

Table 6 shows that more of the farms are found in the small size groups in the terrace areas than in the hill areas; similarly, more of the farms are in the small size groups in the poorer areas.

Farms in Area I are larger than in any other area and have a greater range in size. Farming is more commercial and, although most of the farms are of a family size, many of them were large enough to use two mules, and a substantial number have still larger units, operated with the help of one or more cropper families. Most of the farms in the other areas are below 40 acres in size: proportion of farms below this size vary from 71 percent in Area III to 85 percent in Area IV.

5/ Acres of cropland is used as the measure of size in this analysis, as much of the other farm land is operated under free-range conditions.

Table 6.- Variation in size of farm, by areas, Washington Parish, 1939

Acres of cropland	Area I (better upland)		Area II (poorer upland)		Area III (better terrace)		Area IV (poorer terrace)		All areas	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0 - 9.9	17	3.1	47	6.2	31	6.3	58	16.4	153	7.1
10 - 19.9	76	13.8	175	23.1	117	23.8	109	30.9	477	22.2
20 - 29.9	116	21.0	204	27.0	122	24.8	88	24.9	530	24.6
30 - 39.9	106	19.2	131	17.3	80	16.3	47	13.3	364	16.9
40 - 49.9	77	14.0	98	13.0	39	7.9	26	7.4	240	11.2
50 - 59.9	52	9.4	34	4.5	25	5.0	7	2.0	118	5.5
60 - 69.9	28	5.1	22	2.9	19	3.9	5	1.4	74	3.4
70 - 79.9	17	3.1	15	2.0	19	3.9	3	0.8	54	2.5
80 - 89.9	14	2.6	9	1.2	8	1.6	0	0.0	31	1.5
90 - 99.9	11	2.0	3	0.4	9	1.8	1	0.3	24	1.1
100 and over	37	6.7	18	2.4	23	4.7	9	2.6	37	4.0
Total	551	100.0	756	100.0	492	100.0	353	100.0	2,152	100.0

1939 AAA worksheets.

The size of farm varies both with the area and with the system of farming, and there is a high degree of uniformity in the size of farm within a given system (table 7). For example, the production of truck crops requires a great deal of hand labor during the spring when the labor requirements for cotton and corn are heaviest, so the cotton-and-truck farms are generally small; approximately one-third have from 10 to 20 acres of cropland.

A considerable number of the farmers in the cotton system have two mules. Several of these farmers use cropper labor. In this system, the largest number of farms is in the 20- to 30-acre group. Farmers following the cotton-and-cattle system operate the largest farms. The cattle enterprise does not offer serious competition to the labor requirements of cotton and most of these farms have two head of work stock and can thus better utilize the available labor supply. Also, these farmers usually hire more wage labor.

The general farms are smaller than the cotton farms and the organization requires less labor per acre of cropland. Observation indicates that general farming is usually a result of the type of operator. Such operators have only recently bought their farms, and most of them have only limited means although some have off-farm work and wages.

Types of Farm Organization

Farms in Washington Parish may be conveniently grouped into seven principal types of farm organization (table 8). These groups are representative of the common size of farms, systems of farming, and method of operations. The most common type is the one-mule cotton farm that is generally owned, operated, and worked by the family. One mule furnishes most of the power. In a few two-mule operations, the time of the extra mule is borrowed or exchanged among neighbors. This type of organization is representative of a large number of farms usually containing from 15 to 30 acres of cropland. On the terrace areas the usual size of the organization is somewhat smaller than in the upland areas. Approximately one-fourth of the farms in Washington Parish are one-mule cotton farms.

The second type of farm organization is the two-mule cotton farm. The cropland organization is similar to that of the one-mule cotton farm, but the crop acreage is large enough to require two head of work stock and the hiring of some seasonal labor during hoeing and picking seasons. As on the one-mule farms, the size of this organization is somewhat smaller in the terrace areas than in the upland areas. Approximately one-fifth of the farms in Washington Parish are two-mule cotton farms.

While family farms are the rule in this parish, a considerable number of farmers employ a cropper family to farm part of their land. This type of organization is most prevalent in Area I. Most of the farmers using cropper labor employ only one cropper family. An analysis of the AAA records showed that 280 cotton farmers in the parish used cropper labor and that 174 employed one cropper family. The usual owner-and-cropper farm of this sort is about twice as large as the one-mule farm (table 8).

Table 7. - Variation in size of farm, by farming systems, Washington Parish, 1939

Acres of cropland	Cotton		Cotton and cattle		Cotton and truck		General		Other systems		All systems	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0 - 9.9	74	5.8	4	1.3	14	10.5	29	9.1	32	28.6	153	7.1
10 - 19.9	269	21.0	41	13.2	44	33.1	91	28.4	32	28.6	477	22.2
20 - 29.9	313	24.5	82	26.5	30	22.5	83	25.9	22	19.7	530	24.6
30 - 39.9	213	16.7	62	20.1	23	17.3	55	17.5	10	8.9	364	16.9
40 - 49.9	162	12.7	38	12.3	9	6.8	26	8.1	5	4.4	240	11.2
50 - 59.9	73	5.7	21	6.8	6	4.5	13	4.1	5	4.4	118	5.5
60 - 69.9	48	3.7	12	3.9	2	1.5	10	3.1	2	1.8	74	3.4
70 - 79.9	33	2.6	14	4.5	2	1.5	5	1.6	0	0.0	54	2.5
80 - 89.9	23	1.8	4	1.3	1	0.8	2	0.6	1	0.9	31	1.5
90 - 99.9	15	1.2	7	2.3	0	0.0	1	0.3	1	0.9	24	1.1
100 - 109.9	55	4.3	24	7.8	2	1.5	4	1.3	2	1.8	87	4.0
Total	1,278	100.0	309	100.0	133	100.0	320	100.0	112	100.0	2,152	100.0

1939 AAA worksheets.

Table 8.- Number of farms in the principal types of farm organization, by areas, Washington Parish, 1939

Type of organization	Washington Parish	Area I (better upland)	Area II (poorer upland)	Area III (better terrace)	Area IV (poorer terrace)
	Number	Number	Number	Number	Number
One-mule cotton 1/	579	131	218	139	91
Two-mule cotton	417	138	155	90	34
Owner and cropper 2/	174	64	47	49	14
Cotton and dairy 3/	206	70	64	52	15
Cotton and cattle 3/	103	25	29	27	27
Cotton and truck	133	17	54	37	25
General	320	39	113	52	116
Other types 4/	220	67	76	46	31
All types	2,152	551	756	492	353

1/ Includes also a few farms having no mules at time of survey.
2/ Owner with one cropper or non-managing sub-tenant.
3/ Estimated.
4/ Includes those cotton farms with more than one cropper and those farms classified under "other systems" in table 7.
1939 AAA worksheets.

A fourth type of organization is the cotton-and-dairy farm. The cotton-and-cattle system, described previously, is made up of two types of farm organizations - cotton with dairy cattle, and cotton with farm cattle. The usual cotton-and-dairy farm has 2 mules, 10 to 12 cows and about the same acreage of cropland as the two-mule cotton farm.

A considerable number of farms in this parish raise farm cattle for beef. This farm organization and the income data illustrative of this organization have been presented only for Area IV, but they are representative of cotton-and-farm cattle organizations in other areas.

A sixth type of farm organization found scattered throughout the parish is the cotton-and-truck type. Out of 133 cotton-and-truck farms in the parish, 88 or 66 percent were below 30 acres in size, the usual size being about the same as for the one-mule cotton farms. They are most heavily concentrated in Area III, and are particularly common around Enon and Franklinton.

Approximately one-sixth of the farms in Washington Parish were classified as general farms, the seventh type. These were most prevalent in Areas II and IV. These farms are usually slightly smaller than the one-mule cotton farm and have a larger proportion of their crop acreage in feed crops.

Size of Farm and Investment

A better picture of each type of farm organization can be gained from studying its usual farm size, investment and livestock numbers (table 9). The chief difference in the size of farm in a given type of farm organization is between the upland and terrace areas, and is partially due to the fact that the labor requirements are greater on the heavier terrace soils. For example, the one-mule cotton farms in Areas I and II have about 5 acres more cropland than those in Areas III and IV. Noncropland is generally considered as part of the open range.

The farm investment varies by areas and by types of farm organization. For example, the usual investment for the one-mule cotton farm ranges from $1,076 in Area IV to $1,358 in Area I. Higher land values and a slightly larger unit require the larger investment of Area I. Capital requirements on different types of farm organizations in Area I vary from $1,358 on the one-mule cotton farm to $2,493 on the cotton-and-dairy farms, and to $3,015 on the usual owner and cropper farm.

In many cases the difficulties involved in obtaining the necessary capital has tended to limit the size and type of farm. This is particularly true in the poorer areas. Many of the farms here have been settled in recent years by displaced mill workers and other people of limited means. The substantial increases in investment required for a larger and more diversified farm have limited the number of people who could obtain a farm organization large enough to employ their labor fully.

Livestock Organization

Livestock other than work stock is generally kept chiefly for home use. One mule, one sow, one or two cows, from 18 to 24 hens, represents the amount of livestock generally found on the one-mule cotton farm. The two-mule cotton farms with a slightly larger farm organization and the general farms with a larger proportion of the cropland in feed crops usually have a little more livestock. Only on the cotton-and-dairy and the cotton-and-farm cattle units are livestock an important source of cash farm income. The usual size of dairy herd for the cotton-and-cattle organization varies from 10 head in Area I to 12 head in Area III. The usual size of the cattle herd on the cotton-and-farm-cattle organization in Area IV was 8 head.

Crop Acreages and Yields

Two crops, cotton and corn, occupy from two-thirds to four-fifths of the cropland acreage (table 10). Garden, hay crops, idle land, sugar cane, sweetpotatoes and other miscellaneous crops make up the remainder of the cropland acreage. The corn acreage is usually interplanted with soybeans, cowpeas, or velvet beans; when needed, the interplanted crops are harvested by hand for hay.

Table 9.- Usual investment, farm size, and livestock numbers by type of farm organization, by areas, Washington Parish, 1939

Type of farm organization	Farm size			Farm investment 1/	Livestock			
	Cropland	Woodland: pasture & other land	Total farm		Workstock	Cows	Brood sows	Hens
	Acres	Acres	Acres	Dollars	Number	Number	Number	Number
One-mule cotton farms:								
Area No. 1-better upland	24	21	45	1,358	1	2	1	22
Area No. 2-poorer upland	24	16	40	1,191	1	2	1	24
Area No. 3-better terrace	19	21	40	1,161	1	1	1	18
Area No. 4-poorer terrace	20	20	40	1,076	1	1	1	20
Two-mule cotton farms:								
Area No. 1-better upland	35	35	70	2,010	2	2	2	30
Area No. 2-poorer upland	34	31	65	1,751	2	2	2	24
Area No. 3-better terrace	29	31	60	1,774	2	2	2	30
Area No. 4-poorer terrace	29	31	60	1,655	2	2	2	24
Owner and cropper farms:								
Area No. 1-better upland	52	68	120	3,015	3	3	3	50
Cotton and dairy farms:								
Area No. 1-better upland	35	45	80	2,493	2	10	2	27
Area No. 2-poorer upland	28	32	60	2,039	2	12	2	30
Area No. 3-better terrace	29	41	70	2,325	2	12	2	25
Cotton & farm cattle farms:								
Area No. 4-poorer terrace	29	31	60	1,859	2	8	2	20
Cotton and truck farms:								
Area No. 3-better terrace	19	21	40	1,163	1	1	1	20
General farms:								
Area No. 2-poorer upland	21	19	40	1,145	1	2	2	24
Area No. 4-poorer terrace	19	21	40	1,101	1	2	2	20

1/ Includes land, buildings, and improvements, exclusive of operator's house.

Table 10- Usual acreage in various crops and cotton yield by type of farm organization

Type of farm organization and area	Total crop-land	Cotton	Corn 1/	Legume hay	Garden	Sugar cane	Sweet potatoes	Peanuts	Watermelons	Green beans	Idle land	Cotton 1924-39 ave. yield
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Pounds
One-mule cotton farms:												
Area No. 1-better upland	24.0	6.0	13.0	1.6	0.6	0.5	-	0.6	-	-	1.7	290
Area No. 2-poorer upland	24.0	6.0	12.8	1.2	.6	.3	0.3	.3	-	-	2.5	235
Area No. 3-better terrace	19.0	5.2	10.7	.4	.7	-	.5	-	-	-	1.5	285
Area No. 4-poorer terrace	20.0	5.2	11.3	.7	.6	-	-	.5	-	-	1.7	230
Two-mule cotton farms:												
Area No. 1-better upland	35.0	9.0	19.2	2.3	.6	.5	-	.6	-	-	2.8	290
Area No. 2-poorer upland	34.0	8.6	18.5	1.9	.6	.5	.5	.4	-	-	3.0	245
Area No. 3-better terrace	29.0	7.1	16.6	1.5	.8	.5	.5	-	-	-	2.0	295
Area No. 4-poorer terrace	29.0	7.0	16.9	1.0	.8	-	.5	.5	-	-	2.3	240
Owner and cropper farms:												
Area No. 1-better upland	52.0	13.2	29.9	3.7	1.1	.6	-	.9	-	-	2.6	305
Owner	28.7	5.8	16.8	3.2	.7	.3	-	.6	-	-	1.3	2/
Cropper	23.3	7.4	13.1	.5	.4	.3	-	.3	-	-	1.3	2/
Cotton and dairy farms:												
Area No. 1-better upland	35.0	9.0	18.0	3.7	.7	.5	-	.6	-	-	2.5	310
Area No. 2-poorer upland	28.0	6.6	15.6	1.6	.6	.5	.8	.4	-	-	1.9	255
Area No. 3-better terrace	29.0	6.8	17.4	1.5	.8	.5	.5	-	-	-	1.5	300
Cotton and farm cattle farms:												
Area No. 4-poorer terrace	29.0	7.0	16.5	1.5	.8	-	.7	.5	-	-	2.0	250
Cotton and truck farms:												
Area No. 3-better terrace	19.0	5.0	10.0	.4	.8	-	1.0	.3	-	3/2.0	1.5	270
General farms:												
Area No. 2-poorer upland	21.0	3.3	12.3	1.0	.8	-	1.0	-	-	-	2.6	220
Area No. 4-poorer terrace	19.0	3.0	11.4	-	.8	-	.6	-	0.6	-	2.6	220

1/ Usually interplanted with peas or beans. 2/ Not divided on AAA records.

3/ Double-cropped corn, sweetpotatoes or hay crops commonly follow the green beans.

There is little difference in the proportion of the land used for various crops in any of the types except on the general type of farm organization. The farmers in Washington Parish plant only about one-fourth of their cropland in cotton if they participate in the AAA program. This, except for certain minimum and maximum allotment provisions, generally limits the proportion of cropland which may be allotted to cotton. Approximately one-sixth of the cropland on the general farms is in cotton compared with approximately one-fourth of the cropland in cotton in other types. A larger proportion of the cropland on these general farms is planted to corn and sweetpotatoes. These crops are used primarily for livestock feed and for food.

The organization of the owner-and-cropper farm is usually rather similar to the one-mule and two-mule cotton farm except that it is larger. The cropper usually handles most of the cotton, and the owner raises most of the corn. Approximately one-third of the cropper's land is in cotton, whereas only one-fifth of the owner's land is so used.

Yields of cotton in Washington Parish generally range from 200 to 300 pounds per acre. Greater variation is found in yields between areas than between systems, but yields on individual farms show even wider differences. The average cotton yields are approximately 60 pounds higher in Areas I and III than in Areas II and IV. A variation in yield associated with the type and size of farm organization is also found. The smaller organizations, such as the general farms and the one-mule cotton farms, have the lowest yields, whereas the two-mule cotton-and-dairy farms have the highest.

Corn is the major feed crop produced, despite low and uncertain yields. This has resulted because (1) feed grain is needed, and (2) corn fits into small farm economy in that it requires no equipment additional to that used for cotton. The average yield of corn as estimated by farmers, was approximately 12 bushels per acre in Areas I and III, and 11 bushels per acre in Areas II and IV. The yields of corn and other crops as estimated by farmers are shown in table 26.

Incomes from Different Types of Farm Organization

These major differences in the organizations of farms are reflected in what the farm family gets from the farm. Analysis of each farm organization indicates different combinations of crop and livestock enterprises, varying yields and consequently varying quantities of products for market and home use. The incomes from various types of farm organizations were ascertained by budgeting the normal production and requirements of each enterprise on the basis of 542 enterprise records obtained in 240 farm interviews.

Crop yields and production-requirement data were obtained for cotton, corn, sugar cane, peanuts, sweetpotatoes, soybeans, cowpeas, watermelons, snap beans, and Irish potatoes. Production and requirement data on cotton and corn were summarized by areas and normal cotton yields were also ascertained for each major system from AAA records.

Livestock production and requirement data were obtained for work stock, cattle, hogs, and poultry (table 27). In analyzing the data on cattle, three types of cows were recognized - dairy cows, family cows, and farm cows. Dairy cows are kept by farmers selling milk; family cows are kept by farmers for home-use milk production; farm cow herds are kept primarily for the production of calves but supply the farm family with milk.

The farm investment, machinery, and fence and building expenses are not associated with any particular enterprise but can best be calculated as over-all expense (table 29). The first three of these are associated with the acreage of crops and cotton land, but building expense varies with the size and type of farm organization. Interest on the investment is calculated at 5 percent. Farm income and expenses are based on prices received and paid by farmers as reported to the Agricultural Marketing Service for District No. 6, during the period 1934-39, and AAA payments at the 1939 rate. These prices were adjusted to local conditions where necessary. The adjusted prices are shown in table 30. As farm prices change incomes of the different farm organizations may be compared by simply substituting the new prices.

The two measures of farm incomes used in this analysis were family-labor earnings and net cash income. Family-labor earnings represent the value of the farm production sold and used in the home, minus the cash expenses of production, depreciation charges, and interest on the farm investment. It is the return for family labor and management. Net cash income is the cash farm income minus the cash expenses. As most of the farmers did not receive income for work off the farm, no allowance was made for non-farm income in making these estimates.

The incomes from the most common types of farm organization are low. The usual family-labor earnings on the one-mule general and one-mule cotton farms varies from $228 to $351, and the corresponding net cash income is from $63 to $202 (table 11). Nearly one-half of the farms in Washington Parish are of these two types of farm organizations. Incomes are particularly low in the poorer areas. In Area II, for example, approximately 45 percent of the farms are either of the one-mule cotton or general type of organization. Here the family-labor earnings for the one-mule cotton farm amounts to $299, while that of the usual general type is only $228. The net cash incomes amount to $136 and $75, respectively.

The return for family labor on the two-mule cotton farm was from $53 to $102 higher than that from the one-mule organization; while the net cash income was from $68 to $92 higher.

The family labor earnings from the two-mule cotton farm in Area I is $405 as compared with an owner-family labor earnings of $360 on the owner-and-cropper farm. The net cash income amounts to $290 and $325, respectively. It will be seen from these figures that, although the family labor earnings are lower on the owner-and-cropper farm, the cash income is higher. The large farm and the additional investment of the owner return a higher gross income, but it is not equivalent to interest charges of 5 percent. Certain advantages in having cropper labor are obvious in that it relieves the owner of some of the more laborious tasks and allows him to draw a return on a larger investment.

Table 11.- Normal income by type of farm organization, Washington Parish

Type of farm organization and area	Family labor earnings	Net cash income	Cash farm receipts		Cash farm expenses	Value of products used in home	Interest on investment 1/	Noncash costs	Returns per day spent 2/
			Crops	Livestock					
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
One-mule cotton farms:									
Area No. 1-better upland	351	202	338	24	160	253	68	36	1.51
Area No. 2-poorer upland	299	136	252	25	141	258	60	35	1.36
Area No. 3-better terrace	282	169	249	14	94	204	58	33	1.36
Area No. 4-poorer terrace	222	111	194	15	98	197	54	32	1.06
Two-mule cotton farm:									
Area No. 1-better upland	405	290	459	73	242	267	100	52	1.42
Area No. 2-poorer upland	354	226	374	63	211	265	87	50	1.22
Area No. 3-better terrace	384	255	373	72	190	266	89	48	1.30
Area No. 4-poorer terrace	310	179	273	63	157	263	83	49	1.02
Owner and cropper farm:									
Area No. 1-better upland	675	456	692	93	329	454	151	84	1.49
Owner income	360	325	498	81	254	267	148	84	-
Cropper income	315	131	194	12	75	187	3	0	-
Cotton and dairy farm:									
Area No. 1-better upland	509	432	488	768	824	260	125	58	1.35
Area No. 2-poorer upland	424	322	309	910	897	256	102	52	1.00
Area No. 3-better terrace	468	371	370	900	899	267	116	54	1.10
Cotton and farm cattle farm:									
Area No. 4-poorer terrace	337	217	283	132	198	262	93	49	0.99
Cotton and truck farm:									
Area No. 3-better terrace	310	180	288	15	123	221	58	33	1.36
General farm:									
Area No. 2-poorer upland	228	75	121	63	109	243	57	33	0.96
Area No. 4-poorer terrace	230	63	117	58	112	254	55	32	1.06

1/ Interest calculated at 5 percent.

2/ Includes cash and noncash balance from garden and wood products on these items. The labor requirements for these two enterprises were not estimated.

The family-labor earnings of the cropper are only slightly lower than those of the small owner in the same area. The share-cropper in Area I has a larger income than owner-operators of one-mule farms in the poorer areas of the parish. In appraising his status, however, it should be borne in mind that he has practically no investment from which to get supplemental income in the form of interest. Consequently, his net cash income is considerably lower.

Common Supplemental Enterprises that Increase Income

A considerable number of the farmers are trying to increase the volume of their farm business by establishing supplemental enterprises. One of the common methods is illustrated by the cotton-and-truck farm organization. The one-mule cotton-and-truck farm has the same crop acreage and approximately the same acreage of cotton as the one-mule cotton farm (table 10). The family-labor earnings from the cotton-and-truck farm, using snap beans as the typical truck crop, in Area III amounted to $310. This is $28 higher than the family-labor earnings from the one-mule cotton farm in this area.

Farm cattle provide another enterprise frequently used to supplement the cotton-and-corn organization. The two-mule cotton-and-farm cattle organization in Area IV, with approximately the same cropland organization as the two-mule cotton farm, produces family labor earnings of $337, and a net cash income of $217. The family labor earnings are $27, and the net cash income is $38 higher than the earnings of the two-mule cotton farm in Area IV.

The addition of the dairy enterprise seems to be more effective in raising farm incomes than most other supplemental enterprises. The cotton-and-dairy farm produces a return for operator and family labor of $509 in Area I, $424 in Area II, and $468 in Area III. These incomes are from $70 to $100 higher than the incomes of two-mule cotton farms in the same areas. Two important advantages in the cotton-and-dairy system are to be found in the utilization of idle land and idle time.

Utilization of Pasture Land

Farms with a dairy or beef enterprise make better use of their feed and hay crops and are better able to utilize the noncropland on their farms and on the ranges. The present pasture on farms is not fully used, except on the cotton-and-dairy and cotton-and-farm cattle organizations (table 12). On these farms, the pasture requirements are much in excess of the available pasture on the farm. Under present open-range conditions, the excess pasture requirements for cotton-and-cattle farms are generally obtained from non-farm range land or from neighboring farms that have a surplus of woodland pasture.

The effective utilization of otherwise idle labor probably provides the chief reason for the significant increase in income associated with the cotton-and-dairy organization. When compared with the two-mule cotton farm, this farming system utilizes from 80 to 110 days of additional time of the operator and his family. Where farm earnings are mainly a result of utilizing every opportunity for employment of labor, the wise and effective use of the time of the operator and family labor is of paramount importance.

Table 12.- Estimated animal unit months of pasture available compared with pasture requirements by types of organizations, Washington Parish 1/

Area	Animal unit months of pasture 2/			
	One-mule cotton farms	Two-mule cotton farms	Cotton and dairy farms	Owner and cropper farms
	Number	Number	Number	Number
Area No. 1				
Available	48	76	88	131
Needed	39	48	168	72
Area No. 2				General
Available	42	70	65	42
Needed	39	48	198	39
Area No. 3				Cotton and truck
Available	43	65	77	43
Needed	24	48	198	24
Area No. 4			Cotton and farm cattle	General
Available	43	65	63	43
Needed	24	48	138	39

1/ Includes both crop and non-crop land.

2/ As used in this analysis the term animal unit months of pasture refers to the amount of pasture consumed by a cow or equivalent in addition to the usual amount of hay and concentrates fed.

Labor Requirements

There is a wide difference in the effectiveness with which the various types of farm organizations utilize the available labor of the operator and his family. On the most common types of farm organizations - the one-mule cotton farms and the general farms - the farm family is under-employed throughout the year. (Fogs. 3 and 4). While the labor requirements of the same type of organization varies somewhat in different areas, the chief variation is in the different types of farm organizations. The degree to which these farms provide full employment may be estimated by comparing the labor required under each system with the labor available from a family labor force of two men equivalents. Neither the one-mule cotton farm nor the general farm provides full employment for the farm family during any month of the year.

The two-mule cotton farms and the cotton-and-truck farms provide full employment during the peak seasons, but the seasonal nature of the farm work on these organizations prevents the farmer from effectively utilizing his labor throughout the year. The increase in labor requirements associated with an increased acreage of cotton or the addition of a truck enterprise is concentrated during the cultivating and picking season when the families are already fairly well employed. Cotton supplemented with farm cattle give increased employment throughout the year, but the quantity of labor spent per head of farm cattle is lower than for dairy cows. The usual 8-cow herd provides approximately 48 days of employment. The labor requirements per head of dairy cows are approximately 2½ times as great as per head of farm cattle.

The days of labor required on the usual cotton and dairy farm are considerably greater than the days of labor available during the picking and hoeing season. Consequently, considerable wage labor must be hired or the farmer must work longer hours in these seasons. During the remainder of the year the labor requirements are sufficient to keep the family well employed. The addition of the dairy enterprise provides a year-round job, enabling the farmer to utilize labor which would otherwise be idle during the slack seasons.

The returns per day spent are largest on the one-mule cotton farm (table 11). The two-mule cotton, the cotton-and-dairy and the cotton-and-farm-cattle organizations, however, yield a substantially higher income by utilizing more days of labor at a slightly decreased rate per day.

(For detailed information see tables 28 and 31).

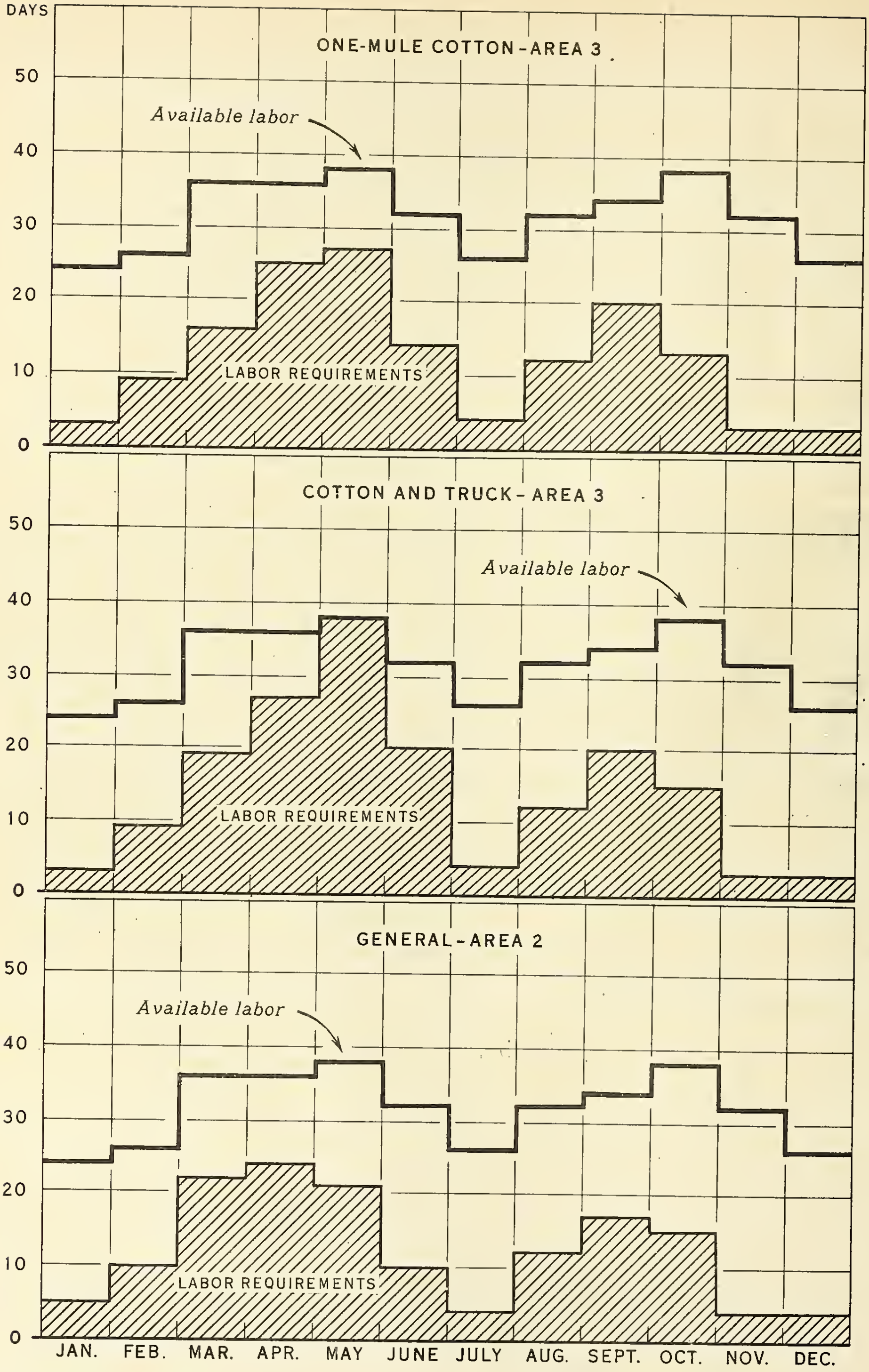

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Figure 3. - Labor requirements of crop and livestock enterprises on one-mule cotton, cotton-and-truck and general farm organization, Washington Parish

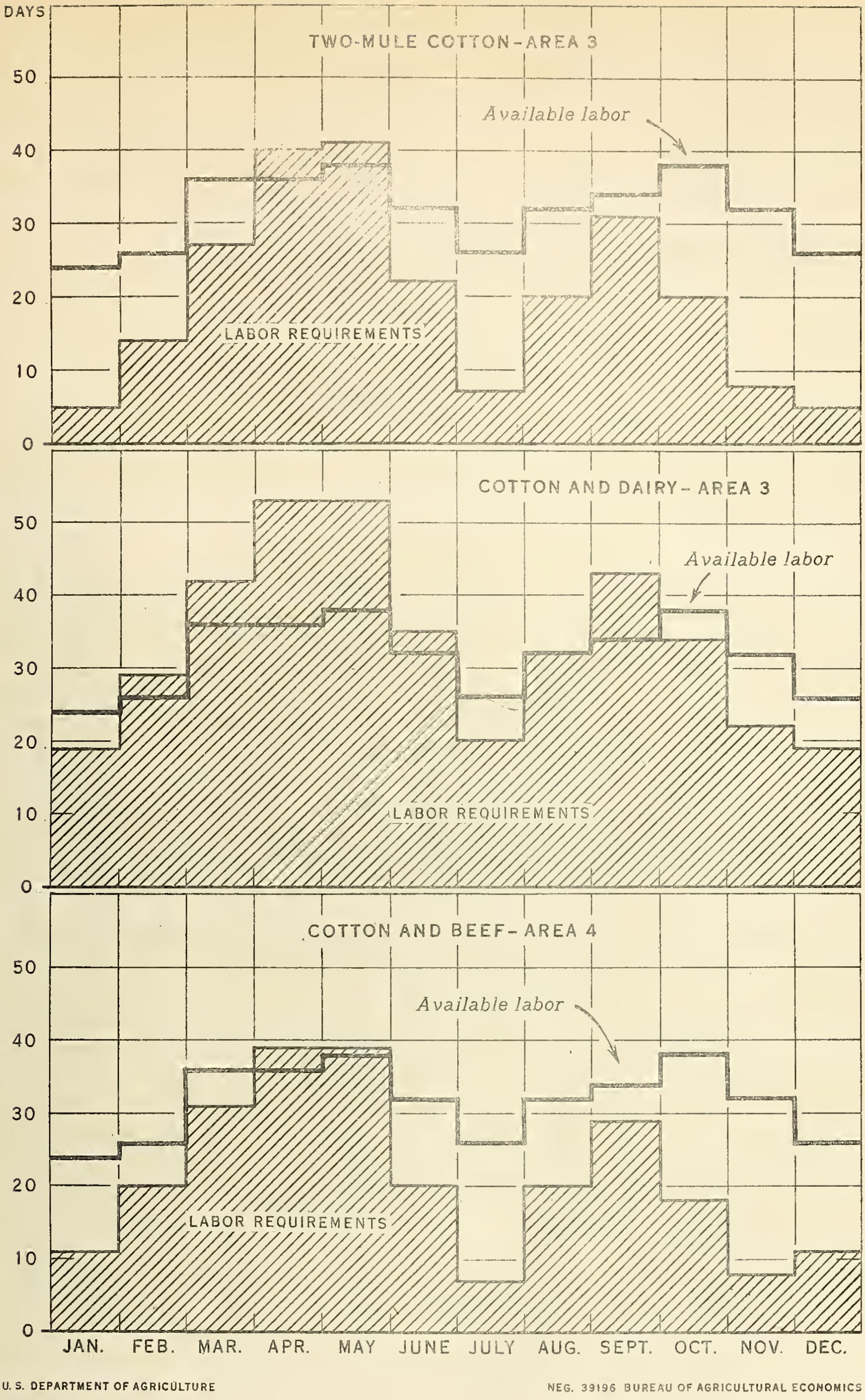

Figure 4. - Labor requirements of crop and livestock enterprises on 2-mule cotton, cotton-and-dairy and cotton-and-farm cattle organizations, Washington Parish

ADJUSTMENT OPPORTUNITIES

The one-mule cotton or general type of farm organization as it is now organized is too small to employ the farm family fully at any time. Labor requirements of these farms are less than one-half of the total available labor.

The farm organization which is large enough to give as full employment as possible has a much better chance to provide more things for the improvement of the family living. An adequate sized family farm has been defined as the size of farm which can be operated with the farm family most of the year, using only such seasonal labor as is commonly hired in the area. Because of the seasonal nature of farm work, the maximum extent of cropland that can be handled by a family tends to be limited by the labor requirements during peak seasons. The size of farm can be increased either by increasing the number of acres operated or by intensifying the system of farming to include enterprises which use the land more intensively.

Long-Time Adjustments in Size

From the long-time standpoint there is a distinct need for increasing the acreage operated. The study of the typical farm organizations and incomes indicates that while the returns from small farms can be increased by utilizing more labor on the same acreage, a family-sized farm operated under the same system will yield a larger net income. It is also apparent that a larger proportion of the two-mule organizations have added supplemental enterprises.

This simply means that if the one-mule cotton farmers were operating a family-sized cotton farm, and similarly the one-mule general farmers were operating family-sized general farms, their incomes would be materially increased and in many cases they could adopt alternatives more easily.

The two-mule cotton farm organization closely approximates a family-sized cotton farm. Since the crop and livestock organization is about the same as on the one-mule cotton farm, the difference in income between the two sizes of farms indicates the increase in income that the farmer can expect by simply enlarging the size of the unit. In Area I, the family labor earnings for the one-and two-mule cotton farms are $351 and $405, respectively; in Area II, they are $299 and $354; in Area III, they are $232 and $334; while in Area IV, the family labor earnings are $222 and $310. The net cash income is increased even more, amounting to approximately $90 in Areas I, II, and III, and $68 in Area IV. The size of the two-mule cotton farm varies from 29 acres in Areas III and IV, to 34 acres in Area II and 35 acres in Area I. If it is assumed that a family-sized cotton farm will require 30 or more acres of cropland in Washington Parish, then 656 or over one-half of the cotton farms in this Parish are too small to employ fully the farm family. The proportion of the cotton farms that are less than 30 acres in size varies from approximately one-third in Area I to more than one-half of the farms in Areas II and III, and nearly three-fourths of the farms in Area IV (table 13).

Table 13.- Number of farm operating units in each farming area, grouped by acres of cropland and systems of farming, Washington Parish, 1939

Area and systems of farming	Total number of farms	Number of farms with			Percent of farms with		
		Less than 30 acres cropland	30 to 59.9 acres of cropland	Over 60 acres of cropland	Less than 30 acres cropland	30 to 59.9 acres of cropland	Over 60 acres of cropland
Area No. 1							
Total	551	209	235	107	38	43	19
Cotton	384	146	161	77	38	42	20
Cotton and cattle	95	27	43	25	29	45	26
Other systems	72	36	31	5	50	43	7
Area No. 2							
Total	756	426	263	67	56	35	9
Cotton	452	251	163	38	56	36	8
Cotton and cattle	93	40	38	15	43	41	16
General	113	69	36	8	61	32	7
Other systems	98	66	26	6	67	27	6
Area No. 3							
Total	492	270	144	78	55	29	16
Cotton	305	162	93	50	53	31	16
Cotton and cattle	79	34	27	18	43	34	23
Cotton and truck	38	29	6	3	76	16	8
Other systems	70	45	18	7	64	26	10
Area No. 4							
Total	353	255	80	18	72	23	5
Cotton	137	97	31	9	71	23	6
Cotton and cattle	42	26	13	3	62	31	7
General	116	86	26	4	74	22	4
Other systems	58	46	10	2	79	17	4
All	2,152	1,160	722	270	54	33	13

1939 AAA worksheets.

The one-mule general farm is too small for an adequate family unit. On the basis of the labor requirements of the 21-acre general farm in Area II, it was estimated that it would require approximately 36 acres of cropland farmed under this system to utilize a labor force of two man-equivalents, assumed to be available. The estimated family-labor earnings on the family-sized general farm would be $139 higher than the family-labor earnings on the usual general farm at present. Approximately two-thirds of the general farm organizations in this area are smaller than an adequate-sized family farm. In Area IV approximately 30 acres would be required for an adequate-sized unit, and about three-fourths of the farm units are below 30 crop acres in size.

370 Too Many Farms?

A general increase in the size of these small farms raises several problems. Data obtained from the AAA indicated that approximately 2,152 farm operating units were in Washington Parish. In order to have each farm family operating a small cotton or general farm obtain an adequate-sized unit, the present crop acreage would have to be enlarged by approximately 12,000 acres and the cotton acreage by about 3,000 acres. Present market outlets for cotton would seem to preclude any such general adjustment entailing a large increase in cotton production in the near future. If on the other hand, present crop acreage is not enlarged, only 1,782 operators would be needed (table 14). This would mean a displacement of 370 farm families. In order to effect such an increase in the size of small farms, suitable work in industry or in new farming areas must be found. This change must necessarily be gradual, and must be predicated upon an improvement in available non-farm employment conditions.

Alternatives for Present Organizations

Another method of increasing incomes is to change the system of farming by adding enterprises that will use the land and labor more intensively. These supplemental enterprises include dairying, truck crops, farm cattle, and woodland. The description of the important types of farm organizations in the parish has indicated that while cotton appears to be the most profitable single enterprise for a part of the land, the farmer finds it necessary to add supplementary enterprises in order to obtain the maximum net returns.

On One-Mule Cotton Farms

Suggestions are now offered concerning ways and means by which the usual one-mule cotton farms can be reorganized to increase the farm income of such a farm by better utilization of the present supply of land and labor. In reaching conclusions as to the best combinations of crops and livestock enterprises for a given farm organization the data were examined for the different farms studied. The examination showed that some organizations were capable of making larger returns than others for similar farm resources. With these facts in mind, minor changes were made in the better organizations until a combination was obtained which, on the basis of normal yields and prices, would result in the largest net returns for the labor of the farm family.

Table 14.- Present number of farm operators in Washington Parish and number required to operate land if small cotton and general farms enlarged to an adequate-sized family farm 1/

Area	Number of families at present	Number of operators if small farms increased to adequate family size	Number of operators that would be displaced	Percentage of operators displaced
	Number	Number	Number	Percent
No. 1--better upland	551	483	68	12
No. 2--poorer upland	756	612	144	19
No. 3--better terrace	492	420	72	15
No. 4--poorer terrace	353	267	86	24
All areas	2,152	1,782	370	17

1/ All cotton and general farms below 30 acres considered as small farms. Family-sized cotton farm assumed to be 35 acres of cropland in Area I, 29 acres in Area III, 34 acres in Area II, and 29 acres in Area IV. Family-sized general farm assumed to be 36 acres in Areas I and II, and 31 acres in Areas III and IV.

The dairy enterprise presents one of the best possibilities in Washington Parish for developing a supplemental source of income. The present outlook for milk and dairy products is favorable, because of the war activity, which is increasing consumer purchasing power. The dairy enterprise is added to the farm organization rather than substituted for a part of the cotton enterprise. Cotton returns a higher income per acre and per hour although under present conditions it has an income advantage for the use of only a part of the land and labor on the farm.

Suggested Cotton-and-Dairy System

Although the dairy enterprise is usually located on the larger farms, several of the one-mule cotton farmers also have added dairying. To show the nature of such an adjustment and to measure its effect on the farm income, the one-mule cotton farm organization has been reorganized and a supplemental dairy enterprise of six dairy cows has been added.

That the one-mule farm may partially meet the increased feed needs, the intensity of the feed production should be increased. A herd of six dairy cows will require approximately 95 bushels of corn or corn equivalent, 1½ tons of hay, 3 tons of cottonseed meal and 3,200 pounds of dairy feed. In view of the limited acreage and unused labor on the one-mule cotton farm, part of the feed supplies should be met by growing a more intensive feed crop than corn. Data on the production of various enterprises in the Parish indicate that sweetpotatoes yielding 85 bushels per acre produce more than twice as much feed per acre as corn. While sweetpotatoes cannot be kept for a long period, farmer experience indicates that at least 2 acres can be utilized with the amount of livestock recommended in this system. There appears to be an opportunity for further increase in the feed production per acre by the use of improved starch varieties recently developed. 6/ Farmers producing these potatoes in a similar area in Mississippi commonly obtain 200 bushels to the acre.

More hay will be needed for the increased livestock even with present feeding practices. It seems advisable also to increase the quantity of roughage fed to livestock as the quantity used at present is very small. On the basis of the normal yield of hay and corn in Area I, lespedeza hay produces more feed per acre than corn. It is suggested that in the reorganized system the hay consumption for the dairy cows be increased from 1½ tons to 2 3/4 tons. This would require approximately 3 acres of lespedeza. The hay should be sown with a winter cover crop, such as oats. On the basis of feeding experiments it was assumed that the extra 1¼ tons of hay would replace the equivalent of 20 bushels of corn.

The additional capital requirements are another obstacle to the addition of a dairy enterprise on the one-mule cotton farm. It is estimated that it will require the expenditure of $100 in cash to supplement the facilities usually found in providing a cow barn, strainer room, and well pump for a herd of six dairy cows. Approximately $200 will be required for the additional cows. In

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6/ Unpublished data, Horticultural Research Department, Louisiana Agricultural Experiment Station.

addition, the increased hay acreage will require the use of mowing and raking equipment. As few one-mule farms now have such equipment, arrangements will need to be made to secure the use of such equipment. Cooperative loans by the Farm Security Administration are designed to assist farmers who need such equipment. Under this system a loan is made to a master buyer who sublets the equipment to a group of neighbors at a custom rate. In this budget, hay mowing has been considered a cash expense at the usual custom rate.

Income

Table 15 presents a comparison of the present one-mule cotton farm and income with the suggested cotton-and-dairy farm and income. Assuming normal yields and prices the family-labor earnings from the cotton-and-dairy organization is $94 higher than that received from the one-mule cotton organization. The returns per day spent are slightly lower but the cotton-and-dairy organization utilizes approximately 3 months of otherwise idle time. The net cash income would be increased $104.

In this analysis it was assumed that the price of market milk would be $2.15.. As the farmer must ship for 2 full months at class 3 prices, he would receive an average price of approximately $2 per hundred during the first year. With a price of $2 per hundred for milk the family labor earnings would amount to $421 or an increase of $70 in the family labor earnings during the first year of shipping milk.

Figure 5 shows the normal labor requirements for crop and livestock enterprises on the suggested cotton-and-dairy organization, which is a family farm. The labor requirements for the crop and livestock enterprises are not distributed evenly throughout the year. However, a more even distribution is desirable only if the increased labor will bring an increased family income. The addition of more livestock would probably bring a more even distribution of labor. But more livestock would necessitate more feed crops and less cotton, and it appears questionable whether such an adjustment would increase the family income.

On many of the one-mule farms the increase in livestock will need to be accompanied by an increase in the pasture production on the farm. Pasture improvement has developed slowly in this Parish because open range has offered a free, if inferior, pasture.

To increase pasture production the present woodland pastures must be improved and managed. Records taken from 27 farmers in this Parish who have open pastures indicate that the per acre carrying capacity of these pastures is approximately three times as great as the carrying capacity of woodland pasture. The normal carrying capacity of woodland pasture was estimated to be one cow to 7 acres for a 7-months grazing period, while the normal carrying capacity of improved pastures was estimated to be one cow to each 2 acres. A survey of the common methods used in establishing and maintaining pastures on 16 of these farms indicated that these methods consisted chiefly of keeping the brush and weeds out of the pasture together with some seeding of grasses and in a few instances the application of basic slag. A summary of these practices is shown in table 32.

Table 15.- Farm organization, income and expenses of one-mule cotton farm and suggested cotton-and-dairy farm, Area I, Washington Parish

Item	Unit	One-mule cotton	Suggested cotton and dairy
Total land in farm	Acre	45	45
Total cropland	do.	24	24
Investment	Dollar	1,245	1,672
Crops:			
Cotton	Acre	6.0	6.0
Corn	do.	13.0	11.3
Sugarcane	do.	.5	.5
Peanuts	do.	.6	.6
Sweetpotatoes	do.	-	2.0
Soybean hay	do.	1.6	-
Lespedeza hay	do.	-	3.0
Garden	do.	.6	.6
Idle land	do.	1.7	-
Livestock:			
Workstock	Number	1	1
Family cows	do.	2	-
Dairy cows	do.	-	6
Brood sows	do.	1	1
Hens	do.	22	36
Farm income and expense:			
Family labor earnings	Dollar	351	445
Net cash income	do.	202	306
Crop receipts	do.	338	316
Livestock receipts	do.	24	405
Cash farm expense	do.	160	415
Value of products used in home	do.	253	265
Interest on investment	do.	68	84
Noncash costs	do.	36	42
Returns per day spent 1/	do.	1.51	1.41
Days required	Number	187	267

1/ See footnote 2, table 11.

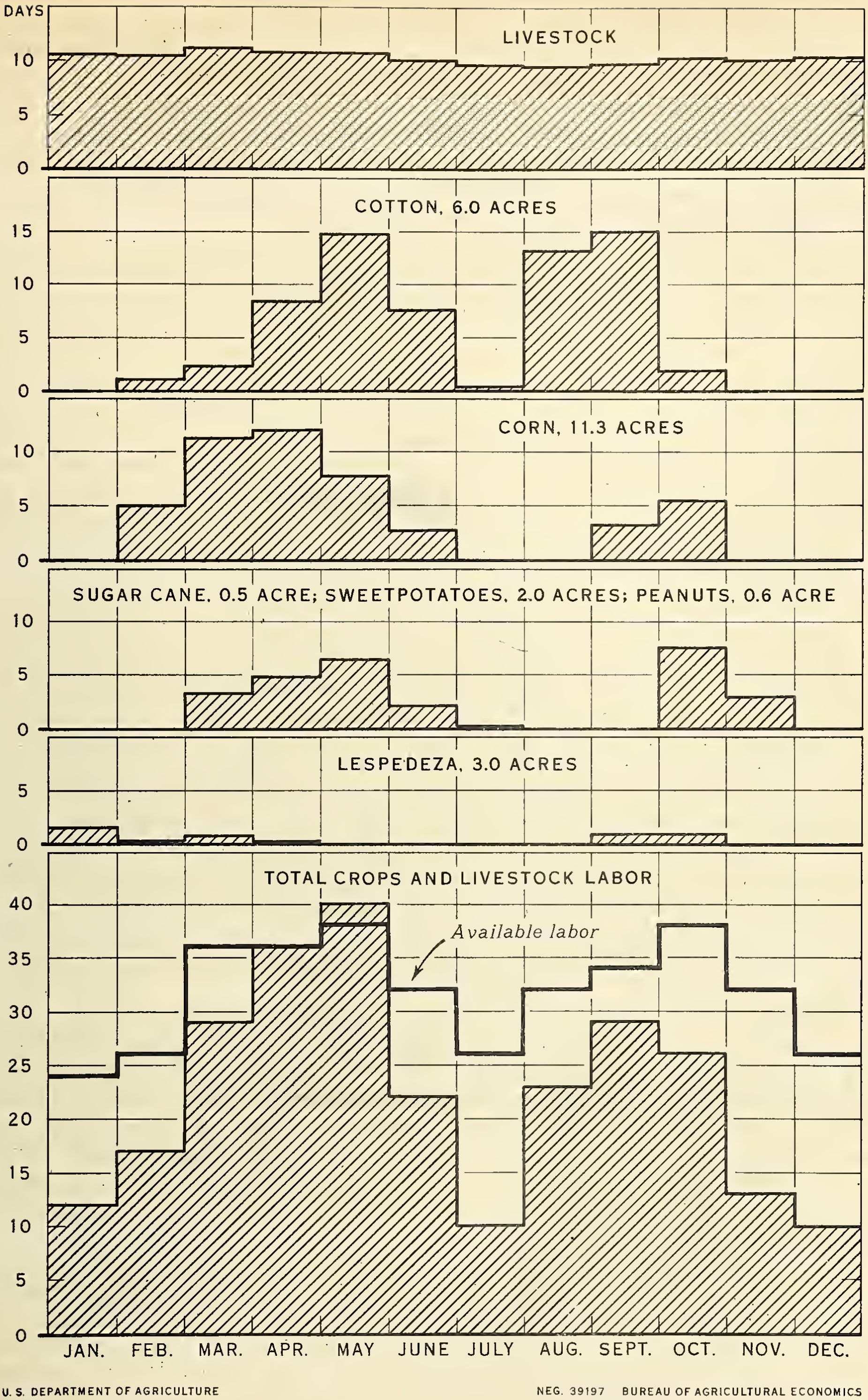


Figure 5. - Man labor distribution on suggested one-mule cotton-and-dairy farms

Good pastures are important in the establishment of a dairy enterprise. Most of the dairy farms now depend on open range land, but such land provides an inferior pasture and further increases in the number of livestock in many localities will need to be accompanied by increased pasture production on the farm. In Area I, a tabulation of the AAA worksheets indicated that 9 of the 55 cotton-and-dairy farmers have some fenced non-crop pasture at present. Approximately 60 percent of the non-cropland on these farms was in fenced open pasture.

The amount of such pasture-improvement work will depend on the particular physical and economic circumstances. On many of these farms only a part of the non-cropland is suitable for pasture. The normal cash costs for establishing the type of improved pastures now being used may be illustrated by assuming that 60 percent of the non-cropland on the reorganized cotton-and-dairy farm would be suitable for pasture. This would amount to 12 acres and would, at normal yields, provide sufficient pasture for the cows in milk. Open range would need to be utilized for other livestock. The cash cost for the normal rates of seeding would amount to $36 and fencing to approximately $60 for the 12 acres. If 400 pounds of basic slag is used the cost would amount to $24. Assuming this investment would last over a 10-year period this would amount to an average cost of about $12 per year.

The farm woodland at present serves two purposes - wood production and pasture. To increase pasture production, it is necessary to clear part of the land of brush and timber. The wood from the cleared land together with that from the acreage left in woodland would supply the farm and family needs for about 4 years. After that arrangement would have to be made to get part of the needed wood elsewhere, either by purchase, arrangements to cut on neighboring farms where wood supply is adequate, or by the purchase of a tract of woodland to supply home needs and provide a supplemental farm enterprise. The feasibility of such a purchase will be discussed later. If the farmer arranges to cut wood on neighboring farms, the usual cost of wood on the stump is 50 cents per cord. On this basis, an annual expense of about $2 would be required to replace the wood now cut from the acreage that would be cleared of brush and trees.

Suggested Cotton, Supplemental Livestock, and Truck

In Areas III and IV the present livestock numbers are inadequate to provide products needed for home use. For example, in Area III only slightly over one-third of the one-mule cotton farms had more than one cow. When livestock enterprises are undertaken with previously unused labor and unused or underutilized land, they add materially to the family living. Study of the one-mule cotton organizations now in Area III indicates that the cropland not now in cotton can, if properly organized, produce enough feed for 3 cows, 2 sows and 30 chickens. The products of this livestock would greatly increase the level of living on these cotton farms.

In addition, 2 acres of snap beans, watermelons, or Irish potatoes could be raised for sale. Snap beans are sold to the canning factory at Franklinton and to truckers; Irish potatoes and watermelons are sold locally and later go to New Orleans. Irish potatoes and snap beans are harvested in May or early June. The land can then be used for late corn, sweetpotatoes, or hay. Watermelons are not harvested until July, but peas are often planted at the last cultivation, so the farmer can get a hay crop following the melons. Sweetpotatoes are sometimes grown as a truck crop, but market possibilities appear to be limited. The yields and prices of truck crops are variable, but as the crop can be grown on the one-mule cotton farm with little hired labor and without taking the land out of feed production, the expenses of production are limited chiefly to seed and fertilizer expense.. Table 16 shows the estimated per acre normal returns above cash costs for beans, potatoes, and watermelons. In this analysis, beans were valued at $35 per ton, watermelons at $.06 per melon, and Irish potatoes at $1 per 100 pounds. At these prices watermelons produce the largest returns per acre, and snap beans the lowest. However, the yields and prices are continually varying for truck crops so that it is difficult to estimate the difference in returns. As prospects change new estimates should be used in analyzing the profitableness of these enterprises.

Table 16.- Truck crops: Estimated production, gross receipts, variable cash expenses and net returns for labor, per acre, Washington Parish

Item	Snap beans	Watermelons	Irish potatoes
	Tons	Number	Pounds
Production	0.925	1/500	4,500
	Dollars	Dollars	Dollars
Gross income	32.37	30.00	45.00
Variable cash costs 2/	16.22	11.25	27.80
Net cash returns	16.15	18.75	17.20

1/ Salable melons.
2/ Expenses for seed, fertilizer, spray materials, sacks, and for bean picking hired.

In setting up the suggested organization for the one-mule cotton farm in Area III, snap beans have been used. The organization and returns would be slightly different with other crops but it was thought that snap beans would provide a common and representative truck crop. Watermelons and Irish potatoes may be budgeted as an alternative with the material provided in table 26. Two acres of sweetpotatoes are planted on the land following the snap beans for use as livestock feed.

The family-labor earnings from the one-mule cotton farm in Area III can be increased $98 by adding supplemental livestock and snap beans (table 17). A substantial part of this increase in income comes from the increase in milk and poultry products for home use. The increase in the value of the products used in the home amounts to $45. The increase in net cash income amounts to $59. The increase in income assumes normal prices for livestock and beans. If the farmer receives only $25 per ton for beans instead of $35, the increase in family-labor earnings would amount to $80, and the increase in net cash income, $41.

Table 17.- Farm organization, income and expenses of one-mule cotton farm and suggested cotton, supplemental livestock, and truck organization, Area III, Washington Parish

Item	Unit	One-mule cotton farm	Suggested cotton, supplemental livestock and snap beans farm 1/
Total land in farm	Acre	40	40
Total cropland	do.	19	19
Investment	Dollar	1,161	1,253
Crops:			
Cotton	Acre	5.2	5.2
Corn	do.	10.7	9.0
Snap beans	do.	-	2/2.0
Sweetpotatoes	do.	.5	2.5
Soybean hay	do.	.4	1.5
Garden	do.	.7	.8
Idle land	do.	1.5	-
Livestock:			
Workstock	Number	1	1
Cows	do.	1	3
Brood sows	do.	1	2
Hens	do.	18	30
Farm income and expense:			
Family labor earnings	Dollar	282	380
Net cash income	do.	169	228
Crop receipts	do.	249	291
Livestock receipts	do.	14	84
Cash farm expense	do.	94	147
Value of products used in home	do.	204	249
Interest on investment	do.	58	63
Noncash costs	do.	33	34
Returns per day spent 3/	do.	1.36	1.38
Days required	Number	149	213

1/ Cotton yield on this organization assumed to be lowered 15 pounds per acre because of the competition of snap beans with cotton for the use of the best land.

2/ Followed by sweetpotatoes for livestock feed.

3/ See footnote 2, table 11.

Truck crops cannot be thought of as a substitute for cotton in this Parish because the yields and prices are continually varying, and the net returns per acre are lower than for cotton. In contrast to the livestock enterprises, truck crops have the disadvantage of massing the farmer's work during the hoeing and chopping season (Fig. 6). However, the number of livestock that can be cared for with the present acreage of feed and cropland pasture is limited, and truck crops enable the farmer who has a surplus of labor to utilize his idle time with a minimum of capital investment.

Suggested Two-Mule General Farms

In some areas in Washington Parish there is a chance to increase the size of unit by clearing additional land which is suitable for cultivation. Such land may come from two sources: (1) land already in farms but not used for crops; (2) land not now in farms.

A considerable amount of non-crop and idle farm land in the area is suitable for cultivation, but it is generally located on the larger farms. Farmers interviewed in regard to the character of their land indicated that an average of 27 percent of their non-cropland was as good as present crop acreage. Small farms that have an acreage of non-cropland or are located adjacent to potentially good cropland may have an opportunity to develop an economic-sized unit. Areas II and IV have considerable acreages not now in farms which can be bought to enlarge the farm unit. The Soil Conservation Service is now preparing a land-use-capability map of the parish which should be a valuable aid in selecting land suited for crop production.

The addition of new cropland to the farm unit may necessitate a change in the system of farming unless the cotton acreage is increased. Under the present AAA program, new cropland of this sort generally will increase the farmer's cotton allotment only when his planted plus diverted acreage in one of the last 3 years has been larger than his present cotton allotment. However, other factors such as the parish allotment from year to year and the abandonment of cotton acreage in the parish are taken into consideration. Whether the farmer can afford to enlarge his unit by bringing new land into cultivation in this event will depend on the value of this land for increased livestock production. Table 18 presents a comparison of the incomes of one-mule cotton and family-sized general farm organizations in Area II. The family-sized general farm has the same acreage in cotton as the one-mule cotton farm. The additional land is devoted to corn and feed crops for livestock production.

A labor force of two man-equivalents could operate a 36-acre general farm in Area II. Table 18 presents the present organization and income of the one-mule cotton farm and the suggested organization and income of a family-sized 36-acre general farm. The suggested family-sized general farm includes 6 acres of cotton, 23 acres of corn, 3.7 acres of lespedeza hay, 1 acre each of sweet potatoes and peanuts, one-half acre of sugar cane and the same garden acreage as on general farms. The increase in feed production would enable the farmer to keep 3 sows, 5 cows and 50 hens. At normal prices and production rates the increase in crop and livestock production would increase the family labor earnings from $299 to $367. The net cash income would be increased from $136 to $219. The labor requirements of this system are more evenly distributed and the organization utilizes a much larger amount of labor than the one-mule cotton

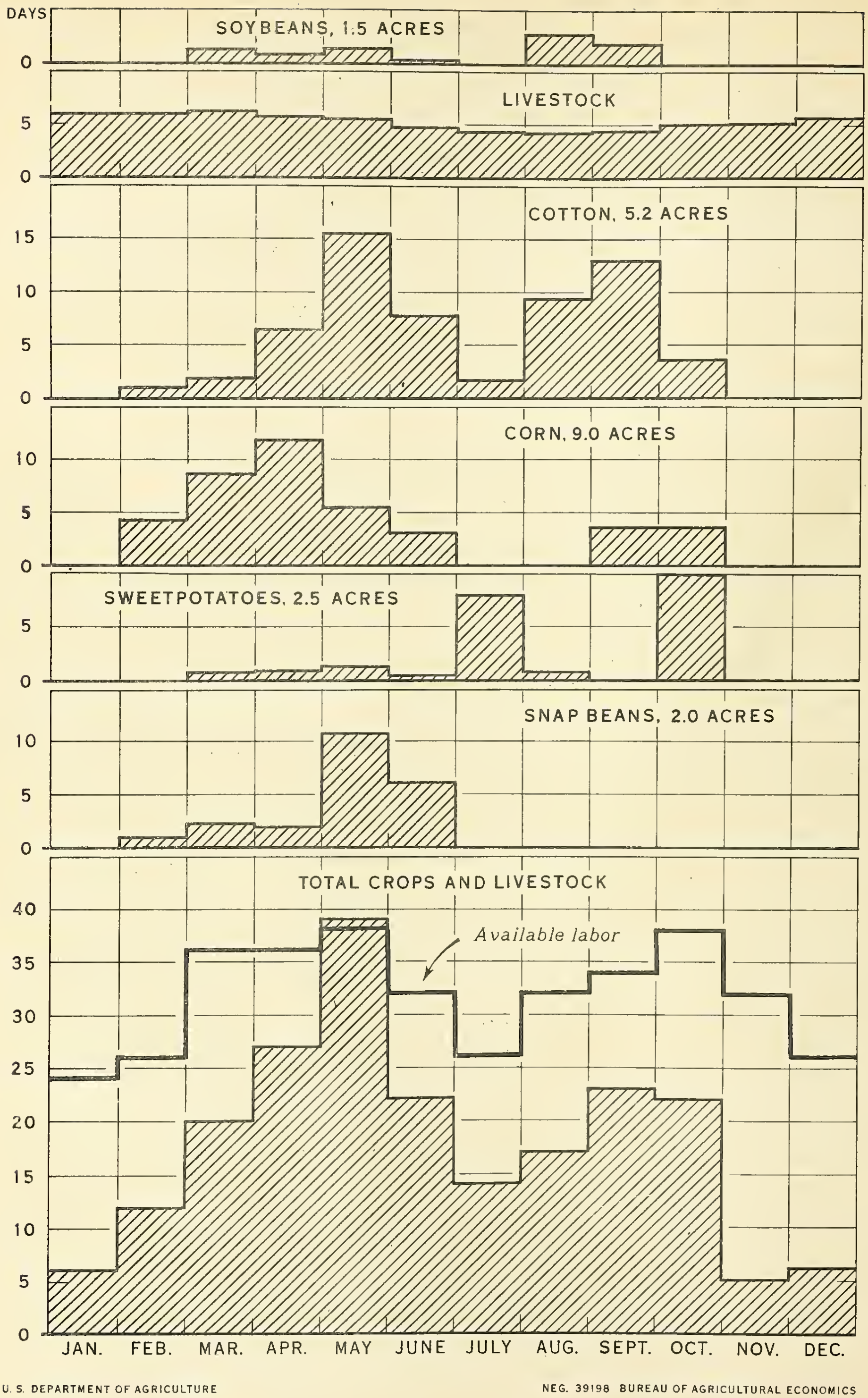


Figure 6. - Man labor distribution on suggested cotton, supplemental livestock and truck farm

Table 18.- Farm organization, income and expenses of present one-mule cotton farm and suggested two-mule general farm, Area II, Washington Parish

Item	Unit	One-mule cotton farm	Suggested two-mule general farm
Total land in farm	Acre	40	70
Total cropland	do.	24	36
Investment	Dollar	1,191	1,990
Crops:			
Cotton	Acre	6.0	6.0
Corn	do.	12.8	23.0
Sugarcane	do.	.3	.5
Sweetpotatoes	do.	.3	1.0
Soybean hay	do.	1.2	-
Lespedeza hay	do.	-	3.7
Peanuts	do.	.3	1.0
Garden	do.	.6	.8
Idle land	do.	2.5	-
Livestock:			
Workstock	Number	1	2
Family cows	do.	2	-
Farm cows	do.	-	5
Brood sows	do.	1	3
Hens	do.	24	50
Farm income and expense:			
Family labor earnings	Dollar	299	367
Net cash income	do.	136	219
Crop receipts	do.	252	276
Livestock receipts	do.	25	167
Cash farm expense	do.	141	224
Value of products used in home	do.	258	299
Interest on investment	do.	60	100
Noncash costs	do.	35	51
Returns per day spent 1/	do.	1.32	1.02
Days required	Number	149	270

1/ See footnote 2, table 11.

farm (fig. 7). The returns per day spent would be less, but the increase in the number of days of labor that could be spent on farm work would increase the family labor earnings.

The cash income of the family-sized general farm is $83 larger, and the family labor earnings are $68 larger than the corresponding returns on the one-mule cotton farm. The increase in labor earnings is not so large as the increase in net cash income because the increase in interest charges and non-cash costs more than offset the increase in the value of the products used in the home. The increase in family-labor earnings indicates, however, that the purchase of additional land for diversification, even at present prices and interest rates, would result in a higher income. When the income from the suggested family-sized general farm is compared with the income of the usual two-mule cotton farm (table 11) it is evident that although the net cash income is somewhat lower, the value of home-use products are higher than that received from the cotton farm, and the family-labor earnings are about the same.

It should be borne in mind that this analysis assumes the usual livestock management, and prices prevailing for the period 1934-39. If the farmer institutes better livestock practices or if farm prices for livestock increase relative to cotton, the advantage of the diversified farm organization would be enhanced. If market facilities can be provided expansion in the peanut acreage might provide an additional opportunity for increased income during the war period.

In view of the desirability of increasing farm incomes without increasing the production of cotton, consideration might be given to providing Federal loans at very low interest rates for the purchase and development of additional land resources to meet the needs of small-owner farms. Under such an arrangement provision might be made that the additional cropland would not be used for cotton. Such loans should provide for buying the land, for the cost of materials used, and for the value of the labor needed to develop the land. Although the labor must be provided by the farmer and his family, they would need a source of income while the land is being developed. Loans of this type would be made with the full recognition that losses would be incurred in many instances. In the most distressed situations, it might be necessary to limit the loan to the estimated repayment capacity of the farm and to extend any additional fund on the basis of a work agreement grant.

In order to evaluate the nature of such a change in farming, it is desirable to measure the effects on the areas concerned. If all of the one-mule cotton farms in Areas II and IV enlarged the farm unit and established a family-sized general organization, this would require the purchase of approximately 10,000 acres of land of which 4,000 acres should be suitable for cultivation. On the basis of the income difference between the one-mule cotton and the family-sized general farm organizations in Area II, this would result in an increase of approximately $25,000 in the net cash income. At present interest rates, the increase in family-labor earnings would amount to about $21,000 per year. If the farmer had the necessary capital, no interest deductions would be necessary and the family-labor earnings would be increased approximately $33,000. Under this situation the family-labor earnings of each farm family would be increased approximately $110 instead of $68.

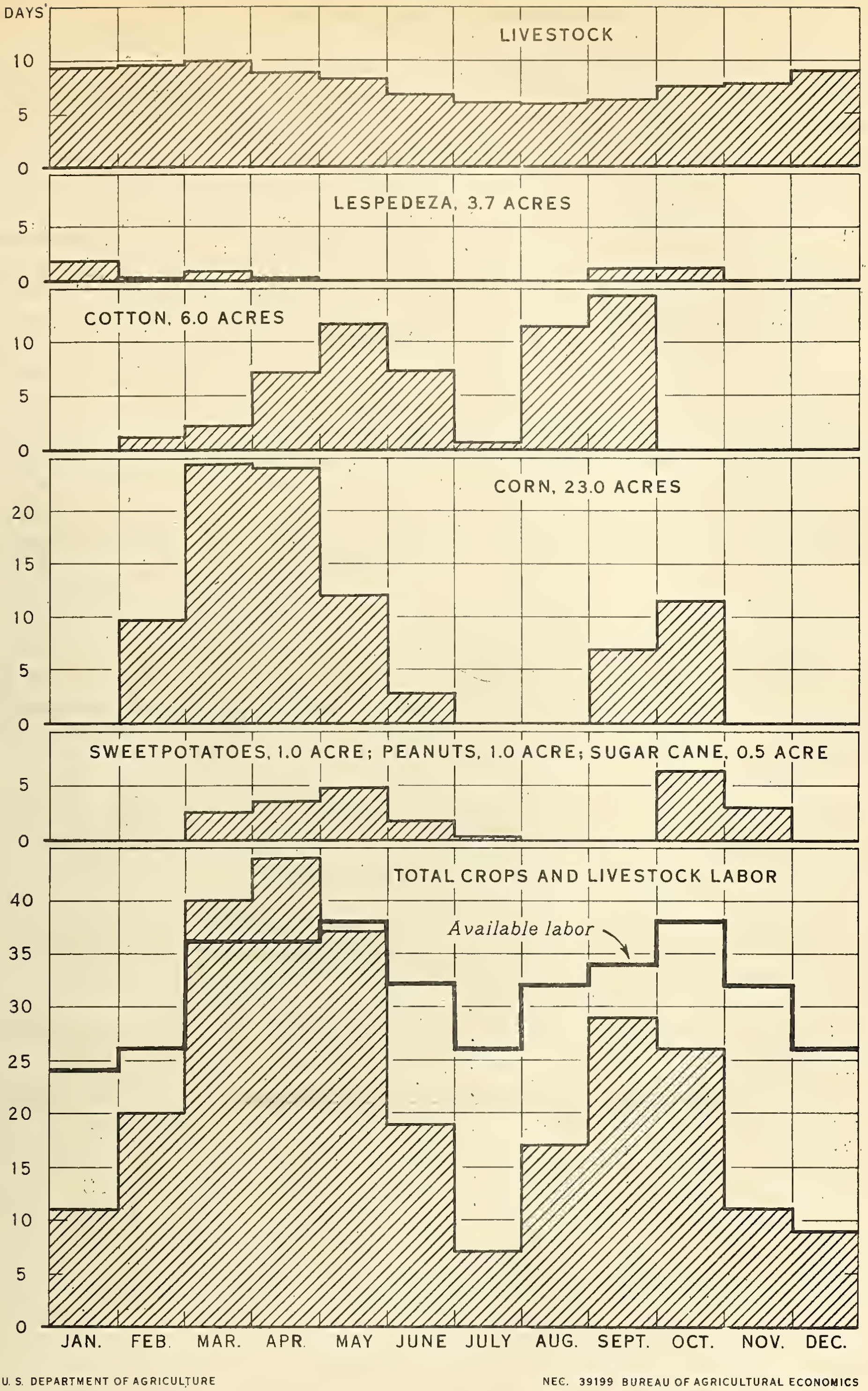


Figure 7. - Man labor distribution on suggested family-sized general farm

On One-Mule General Farms

Of all the farms in Washington Parish, 15 percent, or 320 farms, were classified as general farms; approximately two-thirds of these had less than 30 crop acres. Incomes on small general farms are very low (table 11). These farms not only utilize a small amount of labor but they also return less for each day of work done.

An extensive system of farming on a very limited acreage means an inefficient use of labor and low incomes. With only one-sixth of the cropland in cotton, most of the farm income must be obtained from livestock, but the 16 to 18 acres of cropland available for feed production is insufficient to provide for a sizable livestock enterprise. Thus the farm organization has neither a sizable intensive foundation enterprise, such as cotton, nor sufficient acreage for an important supplemental enterprise. Truck crops have possibilities as a supplemental enterprise, and during the war period an expansion in the peanut acreage would appear to be profitable, but the large fluctuations occurring in yields and prices prevent these crops from providing a firm foundation enterprise. If the present system of general farming is to be followed, these farms should be increased in size in order that these farmers may get incomes comparable with those of other farmers in the area.

In Area II, shifting from a one-mule general farm to family-sized general farm would increase the family-labor earnings from $228 to $367 (table 19). The net cash income would be increased from $75 to $219. The income of such a farm could be further increased by several methods, such as improvements in livestock practices, establishment of a more intensive enterprise such as dairying, or the management of farm woodlands.

Shifting to the two-mule general organization would raise the usual size of farm in Area II from 21 to 36 acres. A similar adjustment in Area IV would raise the usual size of farm from 19 to 31 acres.

Table 19.- Organization, income, and labor requirements of one-mule general farm and family-sized general farm, Washington Parish

Item	Unit	One-mule general farm	Family-sized general farm
Total cropland	Acre	21.0	36.0
Total farm land	do.	40.0	70.0
Cotton	do.	3.3	6.0
Net cash income	Dollar	75	219
Family labor earnings	do.	228	367
Labor requirements	Day	149	270

Two-Mule Cotton Farms

Two adjustments which fit in well with the organization of the two-mule cotton farm have been discussed in the description of the present situation, that is, the addition of a farm cattle enterprise and the addition of a dairy enterprise. The estimated family-labor earnings of the two-mule cotton-and-dairy organizations in Areas I, II, and III are from $70 to $104 higner than the two-mule cotton organizations in the same areas. The net cash incomes are increased from $96 to $142. In Area IV the estimated family-labor earnings of a two-mule cotton farm amount to $310 and the net cash income to $179, while the family-labor earnings of the two-mule cotton-and-cattle farm amount to $337 and the net cash income to $217.

Certain modifications of the present cotton-and-dariy and cotton-and-farm cattle organizations might be suggested to increase the incomes of these farms. They would include such suggestions as the increase in hay acreage, (the use of a hay crop such as lespedeza will not compete directly with cotton for the use of the farmer's time), pasture improvement, and the increase in the feed production of the farm. The present organizations, however, indicate the major adjustments that would occur and the effect on the income of the farm family.

Another alternative which fits in well with the usual organization of two-mule cotton farms is the improvement and management of farm woodlands. Since this would generally compete with any plan for the use of the non-crop farm land, and for enlarging livestock enterprises, information is needed on the income possibilities of farm woodlands.

Extra Dollars from Farm Forests

In Washington Parish, practically every farm has its woodland. An annual crop of fence posts, fuel wood, and an occasional crop of sawlogs and pulpwood are harvested from this woodland. The woodland is a part of the farm acreage and as such it is a part of the farm investment. Family labor, mules, wagons, axes, and minor tools suitable for other farm enterprises are used part of the time in harvesting woodland crops. Farm forestry is, therefore, one of several enterprises on the usual farm, but is now a minor one. Before the farmer willingly develops forestry into a major farm enterprise he must be convinced that better management of farm woodland will produce a higher net farm income. He is further interested in knowing the demand upon his time, both as to total time and seasons when work can be done. The purpose of the study reported here was to appraise the present and potential contribution of farm woodland to the farm economy.

Present Woodland Situation

Although Washington Parish is generally considered as part of the longleaf pine region, on only a few of the farm woodlands studied was longleaf pine the predominant species. The predominating type was loblolly pine and hardwoods with scattered trees of shortleaf and longleaf pine. Furthermore, as longleaf pine does not naturally restock so prolifically as loblolly pine, loblolly is quite generally replacing the longleaf, even on tracts which originally bore practically pure stands of virgin longleaf timber. Because loblolly pine-hardwoods is the predominant type, and because of the limited nature of this study, the results given here are confined to this particular type.

The farm woodlands in this Parish are generally of small acreage. The AAA records show that 39 percent of the farms have less than 20 acres in other lands, which includes woodlands, open pasture, and wasteland. These records also show that an additional 22 percent of the farms in the parish have from 20 to 39 acres in other land. The usual one-mule cotton farm has 20 acres of other land, and the usual two-mule cotton farm has 32 acres of other land. Inventories of farm woodlands showed that on the one-mule farm 15 of the 20 acres of other land were in woods, and on the two-mule farms 25 of the 32 acres of other land were in woods.

The farm woodlands are generally understocked with trees of good quality, and, in many cases, are overstocked with trees of poor quality. As a rule, farm woodlands are overcut, overgrazed, and burned. Present cutting practices, the small extent of woodland, and the heavy drain for fuel wood and fence posts are largely responsible for this poor condition. Moreover, the small owner is sometimes hard pushed for an extra income because of crop failure and so imposes a heavy toll on the woods. On a small farm, grazing is often heavy and fire is sometimes used to get rid of the underbrush so the grass will improve. In spite of mistreatment, the usual farm woodland has succeeded in restocking itself with young growth, which, if properly managed will supply current farm needs and yield a gradually increasing volume of salable material. A small percentage of farm woodlands have been well managed and now contain well-stocked stands that can yield a considerable immediate income. Table 20 gives the average stand for the usual farm woodland, including all except the best 10 percent, and for the best 10 percent of all stands. This table shows

Table 20.- Average number of trees per acre in the loblolly pine, hardwood type, Washington Parish

Diameter breast high (inches)	Good trees				Total	Poor trees				Total	Total		Total
	Pine	Oak	Gum	Other hard-woods		Pine	Oak	Gum	Other hard-woods		Pine	Hard-wood	
(A) - Usual farm woodlands													
4	47.3	3.3	2.0	3.0	55.6	2.4	6.6	2.4	4.8	16.2	49.7	22.1	71.8
6	22.0	2.9	2.2	2.2	29.3	.3	10.0	6.3	8.1	24.7	22.3	31.7	54.0
8	8.8	1.5	1.6	1.2	13.1	.1	3.9	3.6	4.1	11.7	8.9	15.9	24.8
10	3.8	.8	1.3	.6	6.5	.0	1.9	1.3	1.8	5.0	3.8	7.7	11.5
12	2.6	.5	.9	.5	4.5	.0	1.2	1.1	1.1	3.4	2.6	5.3	7.9
14	1.2	.5	.7	.4	2.8	.0	.6	.7	.7	2.0	1.2	3.6	4.8
16	.9	.4	.5	.1	1.9	.0	.7	.4	.6	1.7	.9	2.7	3.6
18	.4	.1	.1	.1	.7	.0	.2	.1	.1	.4	.4	.7	1.1
20	.2	.0	.1	.1	.4	.0	.0	.0	.0	.0	.2	.2	.4
22-24	.0	.1	.0	.1	.2	.0	.1	.1	.0	.2	.0	.4	.4
Total	87.2	10.1	9.4	8.3	115.0	2.8	25.2	16.0	21.3	65.3	90.0	90.3	180.3
(B) - Best 10 percent of farm woodlands													
4	56.1	17.3	2.6	3.4	79.4	1.0	6.3	2.9	1.9	12.1	57.1	34.4	91.5
6	39.7	7.8	.8	.9	49.2	.7	5.8	3.2	1.8	11.5	40.4	20.3	60.7
8	24.3	2.5	1.1	.4	28.3	.2	1.4	2.3	.7	4.6	24.5	8.4	32.9
10	10.4	.2	.3	.6	11.5	.2	.6	.8	.5	2.1	10.6	2.9	13.6
12	6.8	.6	.5	.3	8.2	.2	.8	.6	.2	1.8	7.0	3.0	10.0
14	6.5	.5	.3	.0	7.3	.2	.3	.5	.1	1.1	6.7	1.7	8.4
16	2.3	.4	.1	.0	2.8	.0	.8	.6	.2	1.6	2.3	2.2	4.4
18	3.5	.6	.1	.0	4.2	.0	.0	.0	.2	.2	3.5	.9	4.4
20	1.1	.2	.1	.0	1.4	.0	.0	.0	.0	.0	1.1	.3	1.4
22-24	.6	.0	.0	.0	.6	.0	.0	.0	.0	.0	.6	.0	.6
Total	151.3	30.1	5.9	5.6	192.9	2.5	16.0	10.9	5.6	35.0	153.8	74.1	227.9

by diameter classes the number of good trees (potential saw-timber trees) and the number of poor trees, which should be utilized for pulpwood, fuel wood or other low-quality products. Attention is called to the significant predominance of unprofitable hardwoods in the usual stand that has resulted from years of poor cutting practices. The stand representing the best 10 percent is a good example of what the usual woodland can be built up to if good forestry is practiced for some years.

Forest Products Used and Sold

A survey of the farms showed that about 9.6 cords of fuel wood are used annually on the usual one-mule cotton farm and about 11 cords annually on the usual two-mule cotton farm. Of the fuel wood used on the one-mule cotton farms, about 85 percent is cut from their own woodlands averaging 15 acres each. The 25-acre woodlands on the two-mule cotton farm provide practically all the fuel wood needed on such farms. In most cases, the farm woodland will furnish ample fuel wood if all available noncommercial trees are properly utilized. Farmers have depleted their stands by cutting pine trees for stove wood because they split easily, and leaving uncut the hardwoods which are hard to split. If farmers are willing to cut and season hardwood for fuel in advance of using, there is no reason why the bulk of the fuel cannot come as a byproduct from hardwoods, especially those unsuitable for saw timber.

Approximately 60 fence posts are used each year on the small farms, about the same number of fence posts being used on the one-mule as on the two-mule farms. Only about two-thirds of the fence posts were cut from the farm woodland on the one-mule farm, while practically all of them were cut from the farm woodland on the two-mule farm. In general, farmers are not keeping their fences up well and the situation regarding posts is becoming more critical each year. Pine lightwood posts can no longer be obtained without cost, and good heartwood posts are scarce.

The survey showed that during the last 10 years, only 22 of the 66 farmers cut saw timber from their woodlands, had it sawed into lumber, and used it on the farm. A total of 81,100 board feet was cut, or an average for the 66 farms visited of 123 board feet annually. Lumber was purchased for use on 36 farms. The volume for the 66 farms was 89,860 board feet, or an average of 136 board feet per farm purchased annually. The total volume of all lumber used on the average farm during the 10-year period was, therefore, only 2,590 board feet, or 259 feet annually. A study of farm buildings indicated that present buildings are inadequate and that they are not being maintained in good repair. Evidently, the farmers with low incomes cannot afford to spend much money for lumber.

Out of the total of 66 farmers visited, 31 reported sales of forest products during the last 10 years. The value of forest products sold during this period amounted to a total of $2,735, or $4.14 per farm annually.

Improvement and Management of Farm Woodland

Before describing the probable yields and income that can be expected from managing the usual farm woodlands in this Parish, it is pertinent to ask what practices are necessary to improve the usual farm woodland and to place it under good management.

Good management of the farm woodland is not very different from good farming. Complicated management plan is not needed: on the contrary, good management requires only that the following relatively simple practices be adopted:

(1) Control forest fires.- Without adequate fire protection, management in loblolly pine and hardwoods is useless, for uncontrolled fires prevent natural regeneration and destroy or at least seriously damage the valuable growing stock. A farmer can generally prevent fires in these woodlands without special effort, but it may be necessary in some cases to plow furrows and burn a strip between his woodland and adjoining woodlands in which fires are uncontrolled.

(2) Make improvement cuttings.- The removal of defective and poor-quality trees will improve both the density and the value of the growing stock. Household needs for fuel wood and perhaps some current income from sale of ties can be obtained by utilizing blackjack oak, hickory, and other species of little commercial value, defective and scrubby individuals of pine, oak, and other commercial species that do not contain sawlogs, and tops of felled saw-timber trees. Not only will this improve the condition of the stand, but it will save the pine and better formed hardwoods until they have reached good saw-timber size.

(3) Build up the saw-timber growing stock by limiting the cut during each 5-year period to 20 percent of the saw-timber volume.- Based on the growth studies in the woodlands in Washington Parish, such cutting will result in automatic sustained-yield management. During the first period, when open stands are growing rapidly, cuts of 20 percent of the saw-timber volume (measured in board feet) will remove considerably less than the growth and understocked stands will be built up, but during later periods after stands become more fully stocked and growth has decelerated, 20 percent of the saw timber growing stock will approximately equal the growth. Light cuts at 5-year intervals or shorter periods if practicable, provide the means of promptly salvaging trees that are infested with insects or dying from other natural causes. They also provide for liquidating overmature trees and for thinning overcrowded stands. Although improvement cutting for fuel wood and other home needs applied to the woodland as a whole maybe made each year, it may be desirable to limit the cut of saw timber to once each 5 years, in order that the cut per acre may be heavy enough to justify a commercial operation. The cuts need not be made exactly at 5-year intervals, but market conditions and the financial needs of the owner should be considered when deciding on the time to cut. Cuts at intervals of less than five years should be made where and when they became economically practicable.

(4) Select and mark merchantable trees to be cut so as to build up the quality of the growing stock.- Proper selection is the heart and foundation of good management practices. Real improvement of cutting methods demands that every tree be marked before cutting is allowed. The object in marking the 5-year cut should be to leave the stands in the best condition possible for future growth by reserving immature trees, and at the same time to make the current operation yield the largest possible profit. By cutting trees in all diameter classes and saving many of the larger high-quality trees, the distribution of timber over the several diameter classes will be

shifted from the less valuable smaller toward the more valuable larger diameters. Merchantable trees to be marked for cutting may be classified, beginning with those to be removed first, as follows:

(a) Poor risks, trees unlikely to remain alive until the next cutting.

(b) Trees seriously decayed or infested with beetles.

(c) Overmature trees that have passed optimum development and are now deteriorating.

(d) "Wolf trees" and the poorest trees in overstocked stands that are seriously retarding the growth of better trees.

(e) Poor-quality trees which, because of crook, short body, or limbiness, will produce growth of low-quality only.

(f) Inferior species that have a very limited market as saw timber, such as hickory, red maple, and other hardwoods.

(g) Trees approaching financial maturity, which must be cut to satisfy the need of the farm owner for money.

(5) Cut and sell sawlogs, pulpwood, and ties, instead of stumpage.- By using his family labor for cutting each tree and portion of each tree into those products that will yield the largest net return and then selling to the highest bidder, the farmer can increase his cash income substantially above what he would receive by selling stumpage for a lump sum to the first person who makes an offer.

(6) Limit grazing to work animals and a cow or two.- Natural reproduction of both pines and hardwoods is prevented by heavy grazing.

Assuming that good management practices are adopted, many years will be required, even then, to remold the unmanaged forests of Washington Parish to the pattern desired, for the farm woodlands are generally depleted of high-quality saw timber trees and overstocked with undesirable hardwoods. There is a good understory of young trees, however, and with good growth, good markets, and proper attention to the economic requirements of commercial operation as well as to stand improvement, good management should yield some net income from the beginning, and should become increasingly lucrative as yields increase in quantity and quality.

Available Technical Assistance

Even though the practices necessary for good forest management are relatively simple, will most farmers adopt them? Is sufficient technical assistance available to them for carrying out a program of woodland management? Before farmers will become seriously interested in managing their woodlands, they must be convinced that such management will bring them more money. The information in this report supports this theory, but it is too much to expect that many farmers will read it and adopt the practices recommended.

Evidently, a carefully planned educational program, including concrete demonstrations of profitable management of farm woodlands in the parish, is needed first. Following this, specific help in marking timber on the ground will be required. A limited amount of technical assistance from such a program is now available. Washington Parish is included in the Bogue Chitto-Pearl River Soil Conservation District. This District, which functions under a governing board of farmers, has authority to furnish technical assistance in forestry to farmers. Other public agencies authorized to aid the farmers in forest management are the State Extension Service and State Department of Conservation. The Forestry Division, Gaylord Container Corporation, at Bogalusa, also offers help to farmers in forest management.

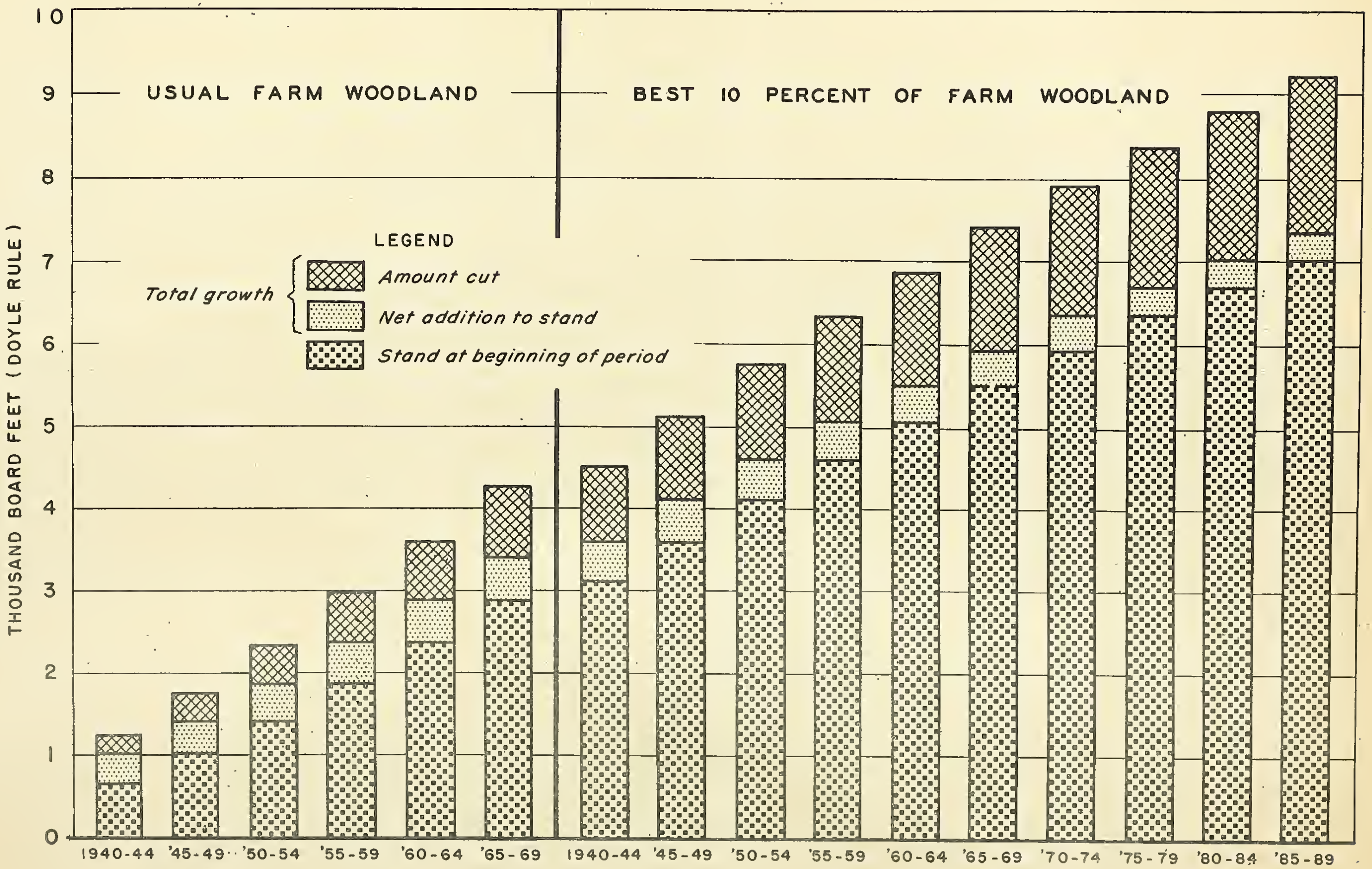
Yields From Usual Farm Woodland

The yields that can be expected from good management of the usual farm woodland on the one-mule and the two-mule cotton farms, consisting of 15 and 25 acres, respectively, have been estimated by 5-year periods from the present time until the year 1970. The yields for the first period, from 1940 to 1945, are based on present stands, present rates of growth, present requirements of fuel wood and other products for home use, and on the assumption that the saw-timber cut will remove 20 percent of the saw-timber volume. Future yields are predicated on deceleration of growth as stands become more heavily stocked, but on the same home needs and a cut of 20 percent of the saw-timber growing stock during each 5-year period.

Management as applied to these stands includes those simple practices that have been set up for the direction of the farmers. The most radical change from present practice is the saving of the potential saw-timber trees for commercial lumber production, and the cutting of the bulk of the fuel wood from hardwood trees that contain no merchantable sawlogs. Although some labor will be required of the farmer in fighting forest fires that threaten the woodland, or perhaps in plowing fire lines, and more effort will be required to cut fuel wood from hard-splitting hardwood instead of easy-splitting pine, the management will not require cash outlays and it requires only such thinning or cutting as will yield salable material or forest products that can be used on the farm.

In this Parish, pine, which grows more rapidly and yields greater returns than hardwoods, should be favored in management, to produce saw timber. Figure 8 shows for the usual farm woodland, and for the best 10 percent of farm woodlands, the pine saw-timber yields that can be expected from good forest management. The diagram shows on a per-acre basis for each 5-year period the stand at the beginning of the period, the total growth during the period, and the yield or that part of the growth that is cut at the end of the period. According to the prediction, after 30 years of management the usual stand of 645 board feet per acre will be built up to 3,425 board feet per acre besides yielding six periodic cuts varying from 255 board feet for the first to 855 board feet for the sixth. During this period the current annual growth of saw timber will increase from 125 board feet (1940-45) to 275 board feet (1965-70). After 50 years of management and selective cutting at 5-year intervals, the stand for the best 10 percent of farm woodlands, which has a present volume of 3,100 board feet per acre, should increase to 7,370 board feet besides yielding 10 cuts varying from 905 board feet for the first to 1,845 for the tenth period.

ESTIMATED PINE SAW-TIMBER YIELDS PER ACRE FROM MANAGED FARM WOODLANDS OF LOBLOLLY PINE-HARDWOOD TYPE IN WASHINGTON PARISH, LA., BY 5-YEAR PERIODS, 1940-89



U. S. DEPARTMENT OF AGRICULTURE

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Figure 8

During the period, the current annual growth will increase from 285 board feet per acre (1940-45) to 433 board feet per acre (1985-90). Consequently, the heavy requirements for fuel wood must be supplied chiefly from hardwoods.

Table 33 shows the cuts recommended in managing loblolly pine and hardwoods, by 5-year periods. On the one-mule farm including 15 acres in woodland, it is necessary to appropriate all of the hardwoods and a part of the pine saw timber besides for producing the fuel wood requirement of 9.6 cords annually, or 48 cords each 5 years. But on the two-mule farm of 25 acres in woodland some of the best hardwood trees and all pine saw timber trees are saved for production of sawlogs, and the fuel wood requirement of 11 cords annually, or 55 cords each 5 years, is cut from pine and hardwood topwood, from defective and limby pine trees, and from the poorer hardwood trees.

Incomes From Usual Farm Woodland

The estimated income by 5-year periods for the one-mule farm woodland under management is shown in table 21, and table 22 shows the incomes of the two-mule farm woodland under management. Incomes for all periods are based on market outlets and prices in effect early in 1940. Prices later in 1940 were considerably higher but may be abnormal because of the requirements of the defense program. Future yields of saw timber will undoubtedly consist of higher grade timber that should have a greater value than present yields, but in order to be conservative the present value has been used for yields of all periods. To show the cash income, the products that are sold have been separated from those that are used on the farm. As the farmer can readily sell sawlogs in the woodland after the trees have been felled and bucked, the value of this labor is computed in the tables. Values, including stumpage and labor, have been set up for fuel wood and fence posts used on the farm. It would be desirable to haul the logs to the sawmill, but usually the farmer does not own a truck or a wagon that is suitable for this purpose. Table 21 shows that even under management the larger part of the wood production on the one-mule farm will be used to fill household and farm needs. The estimated value of the wood that will be used annually on the farm is $22.20. The present periodic cash income of $21 for the one-mule farm, or an average per year of $4.20 may seem small, but this can be increased more than fourfold after 30 years of management. The two-mule farm will produce considerably more wood for sale. The two-mule farm shows a present periodic cash income from sales of $52 or $10.40 annually, and a future periodic income of $161 or $32.20 annually, after 30 years of management. The estimated value of the wood used annually on the farm is $25. A study of these results must impress the reader with the penalty the farmers are paying for overcutting their farm woodlands.

Because these total returns are small, the reader may not consider farm woodland management of much significance. A comparison of present incomes from farm woodlands with those from managed farm woodlands, however, shows quite a contrast. On the one-mule farm, at present, the farmer sells practically no forest products for cash; on the contrary, he must buy annually, or obtain from some other source, 15 percent of his fuel wood of 9.6 cords, or 1.4 cords, and one-third of the required 60 posts, or 20 fence posts. If he bought these products delivered, they would cost about as follows:

1.4 cords fuel wood @	$4.00	$5.60
20 posts (heart oak)@	.08	1.60
		$7.20

Table 21.- Estimated income from management of 15-acre woodland on the usual one-mule farm, Washington Parish 1/

Item	1940-45	1945-50	1950-55	1955-60	1960-65	1965-70
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Cash income, by 5-year periods						
Saw logs						
Stumpage	18	29	34	53	65	77
Labor	3	5	5	9	11	13
Total	21	34	39	62	76	90
Value of products used on farm, by 5-year periods						
Fuel wood						
Stumpage	24	24	24	24	24	24
Labor	72	72	72	72	72	72
Total	96	96	96	96	96	96
Fence posts						
Stumpage	6	6	6	6	6	6
Labor	9	9	9	9	9	9
Total	15	15	15	15	15	15
Total value of products used on farm	111	111	111	111	111	111
Average annual income						
Sales	4.20	6.80	7.80	12.40	15.20	18.00
Products used on farm	22.20	22.20	22.20	22.20	22.20	22.20
Total sales and farm use	26.40	29.00	30.00	34.60	37.40	40.20

1/ Prices used in calculating income.

Saw logs: Pine at $6 per M bd. ft., hardwood at $5 per M bd. ft., $1 per M bd ft., (Doyle rule) for felling and bucking into logs.

Fuel wood: $.50 per cord for stumpage. $1.50 per cord for cutting and hauling fuel wood.

Fence posts: $ .02 per post for stumpage. $ .03 per post for cutting and hauling.

Pulpwood: $ .50 per unit for stumpage. $1 per unit added for cutting and stacking.

Ties: $ .15 per tie for stumpage. $ .15 per tie added for cutting.

Table 22.- Estimated income from management of 25-acre woodland on the usual two-mule farm, Washington Parish 1/

Item	Period					
	1940-45	1945-50	1950-55	1955-60	1960-65	1965-70
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Cash income, by 5-year periods						
Saw logs						
Stumpage	44	61	64	97	118	138
Labor	8	10	11	16	19	23
Total	52	71	75	113	137	161
Value of products used on farm, by 5-year periods						
Fuel wood						
Stumpage	28	28	28	28	28	28
Labor	82	82	82	82	82	82
Total	110	110	110	110	110	110
Fence posts						
Stumpage	6	6	6	6	6	6
Labor	9	9	9	9	9	9
Total	15	15	15	15	15	15
Total value of products used on farm	125	125	125	125	125	125
Average annual income						
Sales	10.40	14.20	15.00	22.60	27.40	32.20
Products used on farm	25.00	25.00	25.00	25.00	25.00	25.00
Total sales and farm use	35.40	39.20	40.00	47.60	52.40	57.20

1/ For prices see footnote on table 21.

On the two-mule farm, the farmer sells only a limited quantity of forest products for cash, but the farm woodland makes him self-sufficient in respect to household and farm needs, at present. Cruises on both one- and two-mule farms indicate that woodlands are going from bad to worse and that in the future more and more of the home needs must come from outside sources.

In contrast, the one-mule farmer, by properly managing his 15 acres of woodland, can produce all of his home needs and thus save the cash outlay shown above. In addition, he can obtain a cash income of $21 during the first 5 years from sale of sawlogs, and increasing quantities in later years as stands are built up to better stocking. The two-mule farmer with 25 acres of woodland can obtain, in addition to home needs, a cash income of $52 during the first 5 years and increasing periodic cash incomes during later years. Although the total value of products sold plus products used on the farm is not large, they become decidedly worth while to the farmer who has nothing to sell and who must buy fuel wood and fence posts.

Incomes With Better Stocked Stand

To show the advantages of better-stocked stands, the probable yields from management of loblolly pine and hardwoods, on 25-acres of the best 10 percent of farm woodlands, were estimated for ten 5-year periods in the future. From this better stand of pine, it is possible during each 5-year period to cut and sell for cash not only sawlogs but also pulpwood. Pulpwood is cut from tops of saw timber trees and from defective and limby trees, removed to improve the stand, and is sold to contractors who furnish the pulp mill with pulpwood. The volume of hardwoods in such a stand, however, is considerably less than that in the usual farm woodland, and it is impossible to save any of the hardwood trees for sawlogs, as the fuel wood requirements take all of the growth. The recommended cuts of various products for the 25-acre woodland are given in table 33. Values have also been computed for these products, as was done in the case of the usual farm woodland.

These results are given in table 23, which shows that after 50 years of management the present periodic cash income of $164, or $32.80 annually, can be increased to a periodic income of $344, or $68.80 annually. The annual net cash income from other farm enterprises on the two-mule farm approximates $250; therefore, the farm forestry income during the first 5-year period adds to this by about 13 percent and during the tenth 5-year period by about 28 percent.

It may be well to point out again that, to keep the estimates conservative and to provide for unexpected reverses, the value per thousand feet of saw timber has not been increased, although the timber cut after some years of management is certain to be of considerably higher quality and larger size than the average timber now being cut and sold in the parish.

The total cash and non-cash incomes from the woodland enterprise would amount to approximately $58 annually, during the first 5-year period and to approximately $94 after 50 years of management. Such an income compares favorably with increases of $70 to $100 commonly realized by adding a dairy enterprise on the usual two-mule farm. A few especially fortunate farmers might be able to expand both their dairying and forestry operations, but these enterprises will generally be competing forms of land use. Unless the usual cotton

Table 23. - Estimated income from management of 25 acres of best 10 percent of woodlands on two-mule farms, Washington Parish 1/

Item	1940-45	1945-50	1950-55	1955-60	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Cash income, by 5-year period										
Sawlogs										
Stumpage	136	154	173	190	207	223	238	251	265	277
Labor	22	26	29	32	34	37	39	42	44	46
Total	158	180	202	222	241	260	277	293	309	323
Pulpwood										
Stumpage	2	3	3	4	5	5	6	6	7	7
Labor	4	5	7	8	9	10	11	12	13	14
Total	6	8	10	12	14	15	17	18	20	21
Total sales	164	188	212	234	255	275	294	311	329	344
Value of products used on farm by 5-year period										
Fuelwood										
Stumpage	28	28	28	28	28	28	28	28	28	28
Labor	82	82	82	82	82	82	82	82	82	82
Total	110	110	110	110	110	110	110	110	110	110
Fence posts										
Stumpage	6	6	6	6	6	6	6	6	6	6
Labor	9	9	9	9	9	9	9	9	9	9
Total	15	15	15	15	15	15	15	15	15	15
Total value of products used on farm	125	125	125	125	125	125	125	125	125	125
Average annual income										
Sales	32.80	37.60	42.40	46.80	51.00	55.00	58.80	62.20	65.80	68.80
Products used on farm	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Total sales and products used on farm	57.80	62.60	67.40	71.80	76.00	80.00	83.80	87.20	90.80	93.80

1/ For prices used see footnote table 21.

and dairy farmer has access to a considerable acreage of rangeland, in addition to his non-crop farm land, he will need to clear at least part of his woodland to obtain sufficient pasture. On the other hand, if he chooses to improve his woodland the pasturing must be light. The decision as to which of the two alternatives will fit in best will depend to a large extent on the capabilities of the land, the present stocking of timber, and the individual farmer's desires and resources such as labor supply.

Adjustment in Size of Woodland on Two-Mule Cotton Farm and Probable Income

The low incomes that can be expected from 15-or 25-acre under stocked farm woodlands, or even those probably incomes from better stocked farm woodlands, do not furnish a complete answer to the question of a potential supplemental farm income from forest lands. The possibility of increasing the size of the woodland and thus substantially supplementing the income from other farm enterprises is worth consideration. The size to which this woodland might be increased would be limited by the following factors:

(1) Acreage of woodland that can be bought for a reasonable price.

(2) Financial ability of the farmer to buy such woodland.

(3) Amount of family labor available for management of farm woodland and not now utilized for other farm enterprises.

The parish has approximately 200,000 acres of non-farm land. A large part of this is woodland in corporate and other ownership, and probably a considerable part of this could be bought if a reasonable price could be paid for it. But the farmer does not have cash with which to buy, and any recommendation of such a program is impracticable unless credit facilities are provided. In another section of this report, it is shown that during a 12-months period a two-mule cotton farmer has 145 days of family labor that is not employed in any farm enterprise. Of this total, 76 days occur during November, December, January, and February; this time could well be used for management of the farm woodland.

Estimates of the annual labor requirements for cutting and managing a farm woodland of 200 acres with a stand similar to that found on the best 10 percent of the farm woodlands are found in table 24. This table shows that about 64 days are required annually to cut the forest products. In addition, it is estimated that 3 days will be required for fire protection, including the building of fire lines; that 2 days will be required to mark the timber to be cut; and that 3 days will be required for supervising the sales and scaling the products before they are removed by the purchaser. This makes a total of about 72 days, which is well within the number of days available for enterprises other than those now pursued on the farm. In most cases, however, the farmer in buying 200 acres would obtain woodlands similar to those on the usual farm, and, with much smaller cuts, the time required for harvesting would be much less until the stand is built up.

Table 24 gives also the recommended annual cuts of sawlogs, pulpwood, ties, fence posts, and fuel wood during the next 5 years for 200 acres of the best 10 percent of farm woodlands and the estimated income of such a woodland under the recommended cutting practice. Both stumpage value and the value of labor in cutting these products are included, but the value that would be added in hauling these products to market has not been included because probably the farmer would not have the use of a suitable truck or wagon. Table 24 shows a total annual cash income of $329 from sale of sawlogs, pulpwood, and ties, and an additional value of $45 for fence posts and fuel wood used annually on the farm. This annual cash income is more than the farmer now receives from crops and livestock production. Such an income would greatly improve the financial position of the farmer for it involves no additional outlay or expense for labor and equipment not now available on his farming operation. The only additional cost beyond those of the present farm woodland would be taxes on the approximately 70 acres which are in excess of the 160-acre homestead now exempt from taxes under Louisiana statutes, and interest on the investment in the woodland. Taxes would probably run between 10 and 20 cents per acre, and timberland would probably have a value of $10 to $20 per acre, depending on location and volume and quality of timber.

In conclusion: Probably the outstanding fact brought out in this study of the place of farm woodlands in the general farm economy is the need for larger and better-stocked woodlands. Growth of timber is rapid and market outlets and prices are satisfactory in the parish, but 15-or 25-acre woodlands cannot contribute enough income to correct the major part of the present deficiency in farm incomes. This might be accomplished if the area of the usual farm woodland can be increased by 4 to 8 times.

Although the Farm Credit Administration can now finance sound additions to farm areas, it is not likely that many loans will be made until farm forestry is more generally understood and practiced. Another possibility is the leasing or renting of private lands by corporate or smaller owners to farmers who would manage and cut the timber on a sharecropping basis. Public ownership of some forest land with some arrangements for its management on a part-time basis by farmers of the area would be another possibility. Although farm forestry in this area can make a distinct contribution to the problems of farm adjustment, the full possibilities will not be realized until problems of increasing farm-woodland acreages and obtaining good management of stands are solved.

Tung

Any discussion of the possibilities of tung production in Washington Parish must be of a preliminary nature. The industry is yet in an embryonic stage, production and practice data are fragmentary and the yields have been highly variable, because of differences in climatic and soil conditions. In addition, most of the tung plantings have been made on large-scale specialized holdings and not as a supplemental enterprise on farms. The first planting in the parish was made in 1928. Yields on this orchard have been erratic and have been handicapped by the fact the soil type is not suited to tung production. In Washington Parish, tung orchards require deep, well-drained, upland soils that are otherwise suited for crop production.

Table 24.- Volume and value of recommended annual cuts and annual labor requirements in cutting and managing loblolly pine and hardwoods on 200 acres of best 10 percent of farm woodlands - - - -

Product	Volume and unit	Value			Labor requirements	
		Stumpage	Labor	Total	Per unit	Total
		Dollars	Dollars	Dollars		Man-days
Forest products sold for cash						
Sawlogs 1/						
Pine	36.2 M bd.ft.	217.20	36.20	253.40	.500	18.1
Hardwoods	2.6 M bd.ft.	13.00	2.60	15.60	.500	1.3
Pulpwood 2/						
Pine	16.2 units	8.10	16.20	24.30	.667	10.8
Ties 3/						
Hardwoods	120 ties	18.00	18.00	36.00	.100	12.0
Total		256.30	73.00	329.30		42.2
Forest products used on the farm						
Fence posts 4/						
Hardwoods	100 posts	2.00	3.00	5.00	.020	2.0
Fuel wood 5/						
Pine	4 cords	2.00	6.00	8.00	1.000	4.0
Hardwoods	16 cords	8.00	24.00	32.00	1.000	16.0
Total		12.00	33.00	45.00		22.0
Total cutting forest products						64.2
Building fire lines						3.0
Marking timber to be cut						2.0
Supervising sales, scaling						3.0
Total cutting and managing						72.2

1/ Stumpage: pine $6 per M board feet, hardwoods $5 per M board feet, Doyle rule; $1 value per M board feet added for felling and bucking into logs.

2/ Stumpage: $0.50 per unit (4' x 5' x 8'); $1 value per unit added for cutting and stacking pulpwood.

3/ Stumpage: $0.15 per tie; $0.15 value per tie added for tie hacking.

4/ Stumpage: $0.02 per post; $0.03 value per post added for cutting and hauling to field.

5/ Stumpage: $0.50 per cord; $1.50 value per cord added for cutting and hauling to house.

A few farmers have planted tung, but a survey of these farms disclosed that most of the orchards are young and in most cases the trees have not been cared for. To guide farmers in making tung plantings and to approximate the production possibilities as an alternative farm enterprise, recommended practices suitable to farm conditions have been outlined and approximate costs and yields for a 10-year period were estimated in cooperation with Dr. G. F. Potter who is in charge of tung investigations for the Bureau of Plant Industry, at Bogalusa.

Tung trees do not produce satisfactorily if neglected or left in sod. In several orchards fairly satisfactory growth is being obtained simply by cultivating the trees and plowing under a cover crop at least once in a season. On the whole, the winter cover crops appear to be the most satisfactory in the orchards. Some form of phosphorus fertilizer must be used in growing the winter cover crop in order to get a satisfactory amount of organic matter for turning under. Austrian peas or vetch, with 500 pounds per acre of basic slag, makes an excellent combination. If the cover crop does well, it frequently may be pastured 2 or 3 months in the spring, and still have a good supply of organic matter to turn into the soil. If the winter cover crop is used, the orchard should be cultivated preferably three to four times during the summer. Thus it might be disked two or three times in the spring, then allowed to go through July and August, and then the soil should be worked up again to provide a seedbed in September. Total labor requirements in turning under the cover crop and cultivating the orchard are less than for corn, but the use of a disk is necessary.

To better evaluate the tung enterprise probable costs and yields for a 10-year period were estimated. In setting up the supplemental tung enterprise it was felt that it would be primarily adapted to two-mule farms and farms of larger size. The usual two-mule cotton farm in Area II was chosen for an example and the 3 acres of cropland now idle was used for tung production.

Tung trees are like many other tree crops in that a considerable period of years must elapse before full production is obtained. The trees generally begin bearing the second or third year but full yields may not be expected for 9 or 10 years. Yield estimates for the first 10-year period under the assumed practices were as follows:

2 or 3 years before production
1 crop yielding 200 pounds of nuts per acre
1 " " 475 " " " " "
1 " " 1,325 " " " " "
1 " " 2,000 " " " " "
3 or 4 years of crop failure

It will be noticed that even with recommended practices numerous crop failures will occur, owing to climatic conditions. On the basis of these estimates, 3 acres of tung would produce a total of 6 tons of tung nuts during the 10-year period. At $30 per ton (the pre-war level) the total production from the 3 acres would be worth $180 or an average of $18 per year.

Annual cash expenses per acre were estimated as follows:

Winter legume seed	$1.50
Fertilizer	2.50
Machinery	1.00
Necessary hired labor	.70

In addition, the planting of 50 trees to the acre and necessary replanting will require an outlay of about $2.70 per acre during the 10 years.

On the basis of these estimates of cash costs, 3 acres of tung would be a total outlay of $179 over the 10-year period or an annual average of $17.90 per year. A substantial cash outlay is required for several years before production begins. Certain miscellaneous costs and returns were omitted, such as: hauling the nuts to the crushing plant, expenses involved in keeping cattle out of orchard while trees are young, the value of tung meal, returns for soil-building practices under AAA, and any increase in feed production resulting from interplanted crops. Assuming that these costs and returns will about counterbalance one another, the estimated returns for the first 10 years after the planting approximated the cash costs involved. But during the next 10 years it is estimated that the yield would average 1 ton of nuts every other year, or a net cash return for labor and management of approximately $7 per acre annually.

A PATTERN FOR BETTER FARM LIVING

Summary of Adjustment Opportunities

More than one-half of the farms in Washington Parish have less than 30 acres of cropland. Most of them are too small to employ the farm family fully under the present system of farming, and the production is insufficient to maintain a high level of income. Inadequate capital resources, population pressure, and the recent restrictions in cotton markets have been among the causes.

Adjustments in both size and type of farming need to be made. Enlargement in the size of the unit is particularly desirable for certain types of organizations. Small general farms seem to be particularly in need of adjustments in size. According to AAA information obtained in 1939, this Parish had 203 of these general farms with less than 30 acres of cropland, concentrated largely in Areas II and IV. In Area II, the usual general farm has 21 acres of cropland of which 3.3 acres are planted to cotton. It is estimated that the increase in the size of these farms to 36 acres of cropland together with the improvement in the organization of the cropland now idle or devoted to feed crops would increase the estimated family labor earnings from $228 to $367; and the net cash income from $75 to $219. Incomes in Area IV would be affected similarly.

The small cotton farms are also in need of more land resources in order to employ the farm family and increase the level of living. AAA data indicate that 656 cotton farms in this Parish have less than 30 acres of cropland. It is believed that in Areas II and IV the incomes of these farmers could be increased with larger acreages of cropland, even though the additional land were not used for cotton production. In Area II, for example, the usual one-mule cotton farm has 24 acres of cropland with 6 acres of cotton. It was estimated that an increase in the cropland acreage by one-half, without increasing the cotton acreage, would increase the family labor earnings by $68 and the net cash income by $83.

Adjustments to improve the use of the present resources on the one-mule cotton farm by a change in the type of farm organization seem to be needed in other areas. In Area I, the addition of the dairy enterprise increases the estimated family labor earnings by $94 and the net cash income by $104. In Area III, the addition of supplemental livestock and truck crops produces an estimated increase in family labor earnings of $98 and an increase of $59 in cash income.

Although the acreage of cropland on the two-mule cotton farms appears to be about adequate to employ the farm family during the cultivating and harvesting seasons, the survey indicated that the addition of livestock or woodland to increase the period of employment and better utilize the land resources would increase farm incomes. Family-labor earnings of two-mule cotton-and-dairy farmers in Area I, averaged $104 higher than the incomes of two-mule cotton farmers in the same area. The net cash income was $142 higher in this area. In Area II, the family labor earnings were $70 higher and the net cash income $96 higher on two-mule cotton-and-dairy farms than on two-mule cotton farms. In Area IV, the addition of a farm cattle enterprise added approximately $30 to the family labor earnings and $40 to the net cash income. Farm woodland, although small and poorly stocked at present, represents a third possibility for increasing incomes. The management of well stocked woodland large enough to employ the farm family during the winter would materially increase both cash and family incomes of these farms. On the basis of the time available during the winter on a two-mule farm in Area III, it is estimated that a two-mule cotton farmer could handle approximately 200 acres of woodland with a stand similar to that found on the best 10 percent of the farm woodlands. It was estimated that woodland of this size and stand would increase the net cash income of a two-mule cotton farm in Area III by $329.

Area Meaning of Farm Adjustments

What would be the probable effects and implications if these adjustments were adopted by a majority of the farmers?

The number of farms in each of the three predominant groups of farms discussed were as follows:

One-mule cotton	579
Two-mule cotton	417
Small general (Areas 2 & 4)	155
Total	1,151

If each group of farms in each area shifted into the alternative mentioned for that area, the number of these farms in each of the alternatives would be as follows:

One-mule cotton & dairy	131
" " " , truck and supplemental livestock	139
Two-mule general	464
" " cotton & dairy	293
" " " " woodland	90
" " " " farm cattle	34
Total	1,151

Table 25 presents the broad outline of the effects on the agriculture of the area if the suggested alternative organizations were adopted. This was arrived at by multiplying the number of farms in each type of organization by the usual income and usual amounts of production in the present organization and in the suggested organization. The effect of any other combination of alternative organizations could be measured in exactly the same manner. This illustration, however, should be sufficient to indicate the broad goals. As additional information is obtained modification can be made.

Table 25 indicates that the estimated increase in family labor earnings of these farmers would amount to approximately $115,000 while the net cash income will be increased about $135,000 if the alternative organizations were adopted. The increase in farm land would amount to approximately 30,000 acres, of which slightly more than 5,000 acres would need to be suitable for cultivation, 16,000 acres for woodland, and the rest would be used for grazing. There are approximately 200,000 acres of non-farm land in the Parish. If these plans were carried out, about 12 percent of this acreage would be needed to supplement present farm acreages.

The adjustments would result in an increase of approximately 5,000 cows, 13 million pounds of milk, of which 12 million would be for sale, 800 thousand pounds of beef, and 500 thousand pounds of pork.

The market for all of these products with the exception of milk would be little influenced by these comparatively small quantities. The 12 million pounds of milk, however, represents a substantial increase in the present production. It is the equivalent of about 1 month's production for sale in the New Orleans area. The market outlets for milk in New Orleans have been increasing during the last few months because of increased employment and programs to increase consumption of low-income groups. Will this market be permanent? How much will the market be able to absorb in the future?

If range is used for pasture, the additional livestock would require about 44,000 acres. Since the range is generally well stocked at present, improved pasture would be needed. If improved pasture, similar in quality to that now being developed on some farms, were developed on these farms it would require approximately 19,000 acres. This would mean that about one-half of the "other" land would have to be developed into improved pasture to provide for the cattle on these farms. How much land is suitable for pasture? What effects would such improved pasture have on the economy of milk production? Only partial answers can be given to such questions, but they serve to point out some of the problems that need continued study by farmers, technical personnel, and research workers in the field of agriculture.

Table 25.- Estimated effects of suggested alternative organizations on 1,151 farms (one-and two-mule cotton farms in all areas and the small general farms in Areas II and IV) Washington Parish

Item	Unit	Present	If alternative organizations adopted	Net increase
		Thousands	Thousands	Thousands
Family labor earnings 1/	Dollar	362	478	116
Net cash income	do.	205	339	134
Cropland	do.	30	35	5
Improved woodland	do.	-	16	16
Other land	do.	28	37	9
Non-farm range land required (unless present pasture improved)	do.	-	44	44
Cotton	do.	7.2	7.4	.2
Cows	Number	2	7	5
Milk produced	Pound	5,180	18,177	12,997
Beef produced	do.	228	1,069	841
Pork produced	do.	1,034	1,581	547

1/ Family labor earning on cotton and woodland farm organization assumed investment expense equivalent to interest charges of 5 percent on 175 acres of woodland valued at $20 per acre.

These adjustments, of course, would not be carried out in exactly this way. The alternatives vary not only by areas but by individual farms. It may be that some farmers will never be capable of operating larger or more diversified farms, whereas other farmers could go even farther than the changes suggested. Similarly, many adjustments will require time. Most woodland stands, for example, are far below the best 10 percent. Even though these woods were bought or rented immediately, in most cases it would be some years before they reached the production assumed in the illustrative organizations. Furthermore, these adjustments represent only about one-half the farms and one-third the total farm land in the area, but it is felt that they represent a large part of the problem.

Table 26.- Usual yields and production practices for various crops per acre, Washington Parish

	Area	Yield	Seed Used	Fertilizer 4-8-4 (lbs)	Fertilizer Nitrate of soda (lbs)	Miscellaneous Cash Expenses 1/	Labor Requirements Man Hours	Labor Requirements Horse Hours
Cotton	1	290 2/	32 lbs	300	-	Ginning @.25 per 100# seed cotton	107	32
	2	235 2/	32 lbs	275	-	Bagging & ties @$1.25 per bale lint cotton	92	30
						Hauling @$1.00 per bale lint cotton		
	3	285 2/	32 lbs	300	-	10# planting seed @ $3.00 per 100#	115	32
	4	230 2/	32 lbs	275	-		101	30
Corn	1	12 bu.	1/8 bu.	100	50	(1/4 bu. peas or beans for inter-) (planting in all areas)	43	38
	2	11 bu.	1/8 bu.	100	50		40	34
	3	12 bu.	1/8 bu.	100	-		45	38
	4	11 bu.	1/8 bu.	150	-		40	34
Sugar cane	All areas	260 gal.	2,000 stalks	500	-	Toll of 1/3 of syrup for making Farmer furnishes 2/3 of cans Cans for home use syrup used 2 years	137 3/	74 3/
Sweet potatoes 4/	All areas	85 bu.	6 bu.	250	-	6/	112	32
Soybeans or cowpeas (in rows)	All areas	1 1/4 tons	1/2 bu.	-	-	1/2 bu. seed	52	32
Watermelons 5/	All areas	600 melons	1 lb.	500	100	4 lbs. cal. arsenate for spray 1 lb. seed	53	31
Shipping beans	All areas	1,850 lbs.	40 lbs.	400	-	40 lbs. seed $.10 per 100# for hauling	109	29
Irish potatoes	All areas	4,500 lbs.	400 lbs.	1,200	-	10 lbs. cal. arsenate for spray 10¢ per 100 lbs. for sacks 400 lbs. seed @ $3 per 100 lbs.	81	35
Peanuts	All areas	20 bu.	1/2 bu.	-	-	6/	93	30
Lespedeza	All areas	1 1/4 tons	1 bu.	Basic slag 300# when planted		1 bu. seed, when planted, lasts 2 to 3 years	15	23

1/ Amount of hired labor required for enterprise not listed as it varies with the type of farm organization.

2/ Yield of one-mule cotton farms varies with type of farm organization as shown in table 2.

3/ First year.

4/ Grown for home use and livestock feed. 5/ 600 melons produced; 100 not salable used for livestock feed.

6/ Fertilizer not usually used on these crops. Commonly grown in a rotation following crops on which fertilizer has been used.

Table 27.- Usual production and practices for livestock enterprises, Washington Parish

Item	Production	Feed practices 1/	Miscellaneous cash expense	Labor requirements (man hours)
Cattle:				
Dairy cows (per 10 cow herd, area 1) 2/	35,000# milk 400# veal 600# beef	8,500# corn meal eq. 10,000# C. S. M. 5,300# dairy feed $2\frac{1}{2}$ tons hay Supplemented by grazing woods pasture & aftermath	Assn. expenses $.35 per mo. Marketing expense $.01 per 100# Vet. and misc. costs $10 Milk hauling $.30 per 100#	1,600
Dairy cows (per 10 cow herd, areas 2 and 3) 2/	34,000# milk 400# veal 600# beef	9,400# corn meal eq. 10,250# C. S. M. 5,300# dairy feed $1\frac{1}{4}$ tons hay Supplemented by grazing woods pasture & aftermath	100# sold Crushing corn $.20 per 100# crushed	1,600
Farm cows (per 10 cow herd) 2/	Home use req. of milk 250# veal 1,900# beef	3,000# C. S. M. $2\frac{1}{2}$ tons hay 2,500 crushed corn Supplemented by grazing woods pasture & aftermath	Corn crushing @ $.20 per 100# Vet., med., salt, and misc., $5.00	600
Family cows (per cow & prod.)	2,500# milk 110# veal	475# C. S. M. 1/5 ton hay 340# crushed corn Supplemented by grazing woods pasture & aftermath	Vet. and misc. $.20 Crushing corn $.20	130
Workstock (per head)		1 ton hay 50 bu. corn Supplemented by grazing woods pasture & aftermath	Vet. and misc. $1.00 Harness repair and depr. $2.75 Workstock depr. $7.80	90
Hogs (per sow and production)	600# pork	30 bu. corn 28 bu. sweet potatoes Supplemented by woods pasture from 7 acres of peas or beans interplanted in corn	Vet. and misc. $2.00	45
Poultry (per flock of 20 hens)	100 doz. eggs 80# meat	18 bu. corn	Misc. costs $1.00	80

1/ Feed in addition to waste products. 2/ Composition of herd: 10 cows, 1 bull; 2 heifers, 1 to 2 years old; 2 other heifers and 5 calves.

Table 28.- Usual amount of various farm products used in home, 1939
Washington Parish 1/

Product		Amount	Value (dollars)
Milk	(gal.)	500	81.70
Eggs	(doz.)	115	22.50
Poultry	(lbs. l.w.)	35	14.00
Pork	(lbs. l.w.)	450	27.00
Corn	(bu.)	12	9.60
Irish potatoes	(bu.)	10	8.50
Sweet potatoes	(bu.)	15	9.75
Syrup	(gal.)	30	10.50
Fresh vegetables	(dollars)	25	
Canned vegetables	(quarts)	75	50.00
Canned fruit	(quarts)	25	
Fuel wood	(cords)	9.4	24.00
Peanuts	(bu.)	5	7.50
Shipping beans	(pounds)	150	26.25
Dried beans or peas	(pounds)	30	1.50

1/ By farmers using product.

Table 29.- Expenses and depreciation on farm machinery and improvements and value of real estate, Washington Parish

Item	Repairs and expenses	Depreciation	Item	Repairs and expenses	Depreciation
	Dollars	Dollars		Dollars	Dollars
Machinery (per crop acre)	0.22	0.27	Strainer room (all areas)	1.15	1.85
Fences (per crop acre)	0.20	0.30	Dairy pump (all areas)	0.50	1.80
Barn (areas 1 and 3)	5.50	10.00	Cow barn (all areas)	1.50	2.00
Barn (areas 2 and 4)	5.50	8.50	Other bldgs. and improvements (all areas)	4.00	-
Corn crib (all areas)	1.50	3.00			
Per acre value of real estate & improvements	Cropland	Other land			
Areas 1 and 3	30.00	12.00			
Areas 2 and 4	27.50	10.00			

Table 30.- Prices used in calculating farm incomes

Products sold 1/		
Product	Unit	Price
Cotton	pound	0.10 3/
Cottonseed	ton	25.00
Milk	100 lbs.	2.15
Corn	bushel	.80
Watermelons	1000 melons	60.00
Shipping beans	ton	35.00
Irish potatoes	100 lbs.	1.00
Syrup	gallon	.35
Hogs	100 lbs.	6.00
Beef cattle	100 lbs.	5.00
Veal calves	100 lbs.	5.50
Milk cows	Head	35.00
Mules	Head	120.00
Chickens	pound	.17
Eggs	dozen	.20
Butter	pound	.28
Butterfat	pound	.24
Hay loose	ton	10.00
Hay bale	ton	12.00
Soybeans	bushel	1.90
Products used in home 4/		
Milk	gallon	.16 5/
Sweetpotatoes	bushel	.65
Peanuts	pound	.05
Wood	cord	2.00

Purchases 2/		
Product	Unit	Price
Labor:		
Wage labor	per day	1.00
Picking (cotton)	100 lbs. seed cotton	.70
Picking (beans)	100 lbs.	.50
Planting seed:		
Cotton	100 lbs.	3.00
Shipping beans	pound	.15
Watermelons	pound	.60
Irish potatoes	100 lbs.	3.00
Soybeans	bushel	2.50
Lespedeza	bushel	2.50
Oats	bushel	.70
Feed:		
Mixed dairy feed	100 lbs.	1.90
Corn meal	100 lbs.	2.10
Cottonseed meal	100 lbs.	1.60
Fertilizer and miscellaneous:		
4-8-4	ton	28.00
Nitrate of soda	ton	36.00
Basic slag	ton	10.00
Ginning	100 lbs.	.25
Bagging and ties	bale	1.25
Hauling (cotton)	bale	1.00
Hauling (beans)	100 lbs.	.10
Cans for sugar cane	can	.08
Sacks (potatoes)	sack	.10
Crushing corn	100 lbs.	.20
Milk hauling	100 lbs.	.30

1/ Based on Prices Received by Farmers, District No. 6, 1934-39, from unpublished data compiled by the Louisiana office of the Division of Statistics and Agricultural Marketing Service, with some adjustments for local varieties in price.

2/ Based on Prices Paid by Farmers, Louisiana, from unpublished data compiled by the Louisiana office of the Division of Statistics and Agricultural Marketing Service, and from schedule information received from field survey.

3/ In addition, the farmer was assumed to receive the AAA payments at the 1939 rate of 3.4 cents per pound of lint and the amount of soil-building allowance earned on that type and size of farm.

4/ Prices of other products used in home assumed to be the same as sale price.

5/ $.16 per gallon for minimum requirements; additional milk used calculated at $.10 per gallon.

Table 31.- Usual man labor requirements per acre for various crops
Washington Parish

Crop	Area	Total	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		hours	hours	hours	hours	hours	hours	hours	hours	hours	hours	hours	hours	hours
Cotton	1	106.8	-	1.7	3.7	14.0	24.5	12.5	0.4	22.0	25.0	3.0	-	-
"	2	92.4	-	1.7	3.4	11.8	19.4	12.2	.9	19.0	24.0	-	-	-
"	3	115.1	-	1.7	3.5	12.3	29.8	14.8	3.0	18.0	25.0	7.0	-	-
"	4	101.4	-	1.7	3.2	10.2	24.8	15.8	2.7	19.0	24.0	-	-	-
Corn	1	43.1	-	4.5	10.3	10.9	7.0	2.4	-	-	3.0	5.0	-	-
"	2	39.7	-	4.2	10.6	10.5	5.2	1.2	-	-	3.0	5.0	-	-
"	3	44.8	-	4.7	9.6	13.1	6.0	3.4	-	-	4.0	4.0	-	-
"	4	40.4	-	4.7	9.6	12.1	6.0	1.0	-	-	3.0	4.0	-	-
Sugar cane 1/	all	118.3	-	-	4.3	14.9	9.8	7.0	3.0	-	-	20.0	59.3	-
Soybeans or cowpeas in rows 2/	all	52.2	-	-	8.0	5.0	8.2	1.0	-	18.0	12.0	-	-	-
Soybeans or cowpeas (broadcast)	all	21.2	-	-	-	4.2	4.6	-	-	-	12.4	-	-	-
Watermelons	all	53.1	-	3.0	10.1	10.5	11.0	8.0	10.0	-	-	-	-	-
Shipping beans	all	108.6	-	4.4	11.1	9.5	53.6	30.0	-	-	-	-	-	-
Sweetpotatoes	all	112.1	-	-	12.2	16.7	23.2	6.7	-	-	-	53.3	-	-
Potatoes	all	81.3	-	26.0	6.0	6.0	43.3	-	-	-	-	-	-	-
Peanuts	all	93.3	-	-	10.6	12.2	20.5	6.7	-	-	10.0	33.3	-	-
Lespedeza	all	15.3	5.0	10.5	2.2	.6	-	-	-	-	3.5	3.5	-	-

1/ Refers to stubble cane; 137 hours required during year in which cane is planted.
2/ Soybeans in rows are usually grown on one-mule farms where hand methods of harvesting are used.

Table 32.- Present pasture practices in establishing and maintaining farm pastures

Normal carrying capacity for 7 months grazing period 1/

Woodland pasture	1 cow to 7 acres
Improved open pasture	1 cow to 2 acres
Years before full grazing obtained	2.0

Costs of pasture establishment per acre:

Seeding (1/2 bu. lespedeza commonly mixed with Dallis or Bermuda) 2/	$3.00
Fencing (based on pasture size of about 20 acres)	4.50
Fertilizer 3/ (400# basic slag @ $.50 per 100#)	2.00

Labor requirements of pasture establishment per acre:

Operation	Time of Year	Tool	Days of Labor Required
Terracing 4/	Fall	Turning plow and drag	2 man days 4 horse days
Breaking	Winter	Turning plow	4 man hours 4 horse hours
Harrowing	March 1-30	Harrow	1 horse hour
Seeding	March 1-30	Hand	1 man hour
Annual pasture maintenance:			
Cutting brush and weeds	Summer	Hand	1 man day
		or	
Cutting brush	Spring	Hand	1 man hour
Clipping	July-August	Mower	1 man hour 2 horse hours

1/ With normal feeding of hay and concentrates.

2/ Normal cost of seeding for pastures seeded. 9 of 16 pastures have done some seeding.

3/ Fertilizer not usually applied. Normal amount for those using fertilizer. 5 out of 16 farms have applied fertilizer. 4 out of 10 farms on upland soils used fertilizer.

4/ Operation performed only on upland pastures.

Table 33. - Cuts at 5-year intervals from farm woodlands with management, Washington Parish

(A). - Usual Farm Woodlands

Period	15-acre woodland					25-acre woodland					
	Sawlogs	Fuel wood		Fence posts		Sawlogs		Fuel wood		Fence posts	
	Pine	Pine	Hardwoods	Pine	Hardwoods	Pine	Hardwoods	Pine	Hardwoods	Pine	Hardwoods
	Bd. ft. 1/	Cords	Cords	Number	Number	Bd.ft. 1/	Bd.ft. 1/	Cords	Cords	Number	Number
1940-45	3,000	4.50	43.50	150	150	6,375	1,250	5.00	50.00	50	250
1945-50	4,875	5.00	43.00	150	150	9,000	1,375	7.50	47.50	50	250
1950-55	5,625	5.25	42.75	75	225	9,375	1,625	8.75	46.25	50	250
1955-60	8,925	6.00	42.00	75	225	14,875	1,625	10.00	45.00	50	250
1960-65	10,875	6.75	41.25	75	225	18,125	1,750	11.25	43.75	50	250
1965-70	12,825	7.50	40.50	75	225	21,375	1,875	12.50	42.50	50	250

(B). - Best 10 percent of farm woodlands

Period	25-acre woodland					
	Sawlogs	Pulpwood	Fuel wood		Fence posts	
	Pine	Pine	Pine	Hardwoods	Pine	Hardwoods
	Bd.ft. 1/	Units 2/	Cords	Cords	Number	Number
1940-45	22,625	4.00	12.50	42.50	50	250
1945-50	25,750	5.50	12.50	42.50	50	250
1950-55	28,875	6.75	12.50	42.50	50	250
1955-60	31,750	8.00	12.50	42.50	50	250
1960-65	34,500	9.25	12.50	42.50	50	250
1965-70	37,125	10.50	12.50	42.50	50	250
1970-75	39,625	11.50	12.50	42.50	50	250
1975-80	41,875	12.50	12.50	42.50	50	250
1980-85	44,125	13.50	12.50	42.50	50	250
1985-90	46,125	14.25	12.50	42.50	50	250

1/ Doyle Rule.
2/ Units = a rick of wood (4' x 5' x 8')